UPSSSC 2026

UTTAR PRADESH SUBORDINATE SERVICES SELECTION COMMISSION

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HAWALDAR INSTRUCTOR

Mains Exam

Part - II

Concepts of Computer and Information Technology

CHAPTERWISE MCQ BANK

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CONCEPTS OF COMPUTER AND INFORMATION TECHNOLOGY

Chapter-Wise MCQ Bank
As Per the Latest Syllabus

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UPSSSC Hawaldar Instructor Mains Exam
Part - II : Concepts of Computer And Information Technology
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CHAPTER 01

History of Computer and Information Technology

1. The word 'computer' is widely considered to have been derived from which language?
(A) Latin
(B) Greek
(C) French
(D) German

2. What is the fundamental difference between data and information in the context of computing?
(A) Data is processed information, whereas information is raw numbers.
(B) Data can only be text, whereas information can only be multimedia.
(C) Data represents raw facts and figures, whereas information is processed and meaningful data.
(D) Data is understood by humans, whereas information is understood only by machines.

3. Which ancient device is generally recognized as the first mechanical calculating device?
(A) Abacus
(B) Napier's Bones
(C) Pascaline
(D) Slide Rule

4. Charles Babbage is known as the "father of the computer" primarily for conceptualising which of the following machines?
(A) Mark I
(B) Tabulating Machine
(C) ENIAC
(D) Analytical Engine

5. What is the full form of ENIAC, one of the earliest electronic general-purpose computers?
(A) Electronic Network Integration and Analytical Computer
(B) Electronic Numerical Integrator and Computer
(C) Electrical Node Integrator and Calculator
(D) Electronic Number Interpretation and Computer

6. Which of the following is not considered a basic characteristic of a computer?
(A) Speed
(B) Accuracy
(C) Emotional Intelligence
(D) Storage Capacity

7. Who is widely recognised as the first computer programmer for writing an algorithm intended to be carried out by Charles Babbage's machine?
(A) Alan Turing
(B) Herman Hollerith
(C) Blaise Pascal
(D) Ada Lovelace

8. The first generation of computers relied on which primary electronic component?
(A) Vacuum Tube
(B) Transistor
(C) Integrated Circuit
(D) Microprocessor

9. Identify the correct statement regarding the second generation of computers.
(A) They relied on vacuum tubes and high power consumption.
(B) They used transistors instead of bulky vacuum tubes.
(C) They introduced microprocessors for general computing.
(D) They relied entirely on artificial intelligence networks.

10. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): First-generation computers required large cooling systems.
Reason (R): Vacuum tubes generated a massive amount of heat during operation.
In the context of the above statements, which of the following options is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

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(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

11. Which primary storage medium was most commonly used for feeding data into first-generation computers?
(A) Punched Cards
(B) Floppy Disks
(C) Magnetic Tapes
(D) Optical Discs

12. What was the main electronic component that defined the third generation of computers?
(A) Transistor
(B) Microprocessor
(C) Integrated Circuit
(D) Artificial Neural Network

13. Which of the following terms refers to the computer's ability to perform repetitive tasks without losing concentration or accuracy?
(A) Versatility
(B) Reliability
(C) Scalability
(D) Diligence

14. Which computer is recognised as the first computer developed in India?
(A) PARAM 8000
(B) Siddharth
(C) TIFRAC
(D) AIRAWAT

15. Consider the following statements regarding the components of the Analytical Engine:
I. It had a 'Mill' which acted like a modern CPU.
II. It had a 'Store' which functioned as memory.
III. It used a graphical user interface (GUI) for output.
Which combination of statements is correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

16. The fundamental concept of the "stored-program" architecture, which is the basis for modern computers, was proposed by whom?
(A) Charles Babbage
(B) Tim Berners-Lee
(C) Gordon Moore
(D) John von Neumann

17. The transition from the third to the fourth generation of computers was marked by the invention of which component?
(A) Microprocessor
(B) Vacuum Tube
(C) Transistor
(D) Magnetic Core

18. Which generation of computers is fundamentally associated with Artificial Intelligence (AI) and Ultra Large Scale Integration (ULSI)?
(A) Second Generation
(B) Third Generation
(C) Fourth Generation
(D) Fifth Generation

19. What is the standard classification of computers based on their operating principles or functioning?
(A) Analog, Digital, Hybrid
(B) Micro, Mini, Mainframe, Super
(C) General Purpose, Special Purpose, Embedded
(D) Desktop, Laptop, Tablet, Smartphone

20. Match List I with List II:
List I: (Computer Generation)
P. First Generation
Q. Second Generation
R. Third Generation
S. Fourth Generation
List II: (Core Technology)
1. Integrated Circuit (IC)
2. Vacuum Tube
3. Microprocessor
4. Transistor
Which of the following options represents the correct match?
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-4, R-3, S-1
(D) P-1, Q-3, R-4, S-2

21. Which type of computer processes data that continuously varies, such as temperature, pressure, or voltage?
(A) Digital Computer
(B) Analog Computer
(C) Mainframe Computer
(D) Supercomputer

22. What is the full form of IC in the context of computer hardware?
(A) Integrated Chip
(B) Internal Circuit

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(C) Integrated Circuit
(D) Intelligent Circuit

23. A computer used in an intensive care unit (ICU) that measures a patient's continuous vital signs and converts them into digital numbers on a screen is an example of which type of computer?
(A) Analog Computer
(B) Digital Computer
(C) Mainframe Computer
(D) Hybrid Computer

24. Which category of computer by size is typically the most expensive, physically largest, and used for highly complex scientific calculations like weather forecasting?
(A) Microcomputer
(B) Minicomputer
(C) Mainframe Computer
(D) Supercomputer

25. Consider the following statements about the characteristics of modern computers:
I. They can process millions of instructions per second.
II. They lack the ability to make spontaneous self-decisions.
III. Their accuracy decreases when processing large volumes of data.
IV. They can store huge amounts of data for future retrieval.
Which combination of statements is correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

26. Which of the following is considered the fastest memory inside a computer system?
(A) CPU Registers
(B) RAM
(C) Cache Memory
(D) Hard Disk Drive

27. Identify the incorrect statement regarding microcomputers.
(A) They are primarily designed for personal and individual use.
(B) Laptops, tablets, and desktop PCs are common examples.
(C) They are far more powerful than modern supercomputers.
(D) They use microprocessors as their main central processing unit.

28. Which of the following fields heavily utilises supercomputers?
(A) Printing simple text documents
(B) Basic payroll processing for a small business
(C) Maintaining student attendance in a primary school
(D) Quantum mechanics and molecular modelling

29. The term 'Information Technology' (IT) broadly encompasses which of the following?
(A) Only the physical hardware components and internal circuits of a computer
(B) Only the commercial software applications developed for enterprise businesses
(C) The use of systems, networks, and devices to process and exchange data
(D) The academic study of ancient communication techniques and historical methods

30. Which of the following represents the correct sequence of the standard data processing cycle?
(A) Output, Process, Input, Storage
(B) Input, Process, Output, Storage
(C) Process, Input, Storage, Output
(D) Storage, Input, Output, Process

31. Which of the following is a key component of the Information Technology revolution in the modern digital age?
(A) Typewriters
(B) Telegraphy
(C) Mechanical Calculators
(D) The Internet

32. In what year was the Information Technology Act (IT Act) originally enacted by the Parliament of India?
(A) 1995
(B) 1998
(C) 2000
(D) 2008

33. The primary objective of the Information Technology Act, 2000 is to provide legal recognition to which of the following?
(A) Manual bookkeeping and physical record management
(B) Physical property registration and land ownership
(C) E-commerce and electronic records
(D) Oral business contracts and verbal agreements

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34. Which section of the IT Act, 2000 primarily deals with punishment for hacking or damage to computer systems?
(A) Section 43
(B) Section 66
(C) Section 67
(D) Section 70

35. What is the fundamental purpose of the Digital India programme launched by the Government of India?
(A) To replace all traditional paper currency exclusively with cryptocurrency
(B) To manufacture high-performance supercomputers for space exploration missions
(C) To restrict high-speed internet infrastructure exclusively to urban metropolitan areas
(D) To transform India into a digitally empowered knowledge economy

36. Which of the following is NOT one of the core vision areas of the Digital India programme?
(A) Digital infrastructure as a core utility to every citizen
(B) Mandatory physical presence for all government services
(C) Governance and services on demand
(D) Digital empowerment of citizens

37. Which state government portal in Uttar Pradesh is specifically designed to provide citizen-centric services such as caste, income, and domicile certificates online?
(A) e-NAM
(B) UP-Kisan
(C) e-District
(D) e-Challan

38. What is the full form of UMANG, an application launched by the Government of India for e-governance?
(A) Universal Mobile App for National Governance
(B) United Mobile Application for Network Governance
(C) Unified Mobile App for Next-generation Government
(D) Unified Mobile Application for New-age Governance

39. Which government initiative provides a platform for citizens to digitally store their important documents like driving licenses and mark sheets?
(A) DigiLocker
(B) e-RaktKosh
(C) e-Sanjeevani
(D) SWAYAM

40. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Computer literacy is considered essential in modern administration.
Reason (R): E-governance initiatives require digital platforms for efficient service delivery to citizens.
In the context of the above statements, which of the following options is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

41. Which classification of computer is typically used by large organisations for bulk data processing, such as census information or transaction processing?
(A) Embedded Computer
(B) Mainframe
(C) Microcomputer
(D) Analog Computer

42. High-level programming languages like FORTRAN and COBOL became widely used during which generation of computers?
(A) First Generation
(B) Second Generation
(C) Third Generation
(D) Fifth Generation

43. Which of the following represents a major challenge or limitation of widespread Information Technology adoption?
(A) Rapid increase in global communication speeds
(B) Substantial reduction in physical paper usage
(C) Cyber threats and data breaches
(D) Enhanced operational transparency in governance

44. What term is used to describe the gap between individuals who have access to modern information and communication technology and those who do not?

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(A) Cyber Gap
(B) Tech Vacuum
(C) Network Barrier
(D) Digital Divide

45. Consider the following statements regarding the benefits of Information Technology in agriculture:
I. It helps in weather forecasting and climate updates.
II. It enables farmers to check current market prices via mobile portals.
III. It completely replaces the need for physical water and fertilisers.
Which combination of statements is correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

46. Find the odd one out among the following computer hardware devices.
(A) Monitor
(B) Keyboard
(C) Printer
(D) Projector

47. In the context of computers, what does the principle "GIGO" stand for?
(A) Gigabytes In, Gigabytes Out
(B) General Input, General Output
(C) Graphics In, Graphics Out
(D) Garbage In, Garbage Out

48. The GIGO principle directly relates to which basic characteristic of a computer?
(A) Accuracy
(B) Speed
(C) Versatility
(D) Storage

49. Which prominent Indian scientist is often referred to as the architect of India's first supercomputer initiative (PARAM)?
(A) APJ Abdul Kalam
(B) Homi J. Bhabha
(C) Vijay Bhatkar
(D) Vikram Sarabhai

50. Match List I with List II:
List I: (IT Application Area)
P. Education
Q. Medicine
R. Finance
S. Governance
List II: (Example/Tool)
1. Telemedicine
2. Internet Banking
3. SWAYAM Portal
4. UMANG App
Which of the following options represents the correct match?
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

51. What is the primary material used in the manufacturing of semiconductor integrated circuits (ICs)?
(A) Copper
(B) Iron
(C) Aluminum
(D) Silicon

52. Which of the following is an example of an application software rather than system software?
(A) Microsoft Windows 10
(B) Microsoft Word
(C) Linux
(D) Android OS

53. Which technology made it possible to shrink the size of computers drastically, paving the way for personal computers (PCs)?
(A) Magnetic Tape
(B) Vacuum Tubes
(C) Microprocessor
(D) Optical Fiber

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54. The term 'Digital Signature' in the IT Act, 2000 is used for what purpose?
(A) To scan and digitize hand-written paper signatures for graphics
(B) To create and design digital artwork for web publishing
(C) To secure and lock a physical workstation using a stylus device
(D) To authenticate electronic records

55. Consider the following statements regarding the classification of computers:
I. A smartphone is fundamentally a type of microcomputer.
II. Hybrid computers combine features of both analog and digital computers.
III. Supercomputers are primarily used for basic word processing.
IV. Mainframes support thousands of users simultaneously.

Which combination of statements is correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

56. What does the term 'e-Governance' mean?
(A) The election of government officials through electronic voting machines only
(B) The application of Information Technology for delivering government services
(C) A government strictly for IT professionals
(D) Banning all physical government offices

57. Which was the first computer installed in India in 1956, located at the Indian Statistical Institute (ISI), Calcutta?
(A) TIFRAC
(B) HEC-2M
(C) PARAM 8000
(D) IBM 1401

58. Identify the incorrect statement regarding the TIFRAC computer.
(A) It was a fourth-generation computer based on microprocessors.
(B) It was developed at the Tata Institute of Fundamental Research.
(C) It was India's first indigenously developed electronic computer.
(D) It was officially commissioned in 1960.

59. Which generation of computers saw the introduction of the Graphical User Interface (GUI) and the computer mouse becoming mainstream?
(A) First Generation
(B) Second Generation
(C) Third Generation
(D) Fourth Generation

60. Arrange the following categories of digital computers in ascending order of their general processing power and cost:
I. Mainframe Computer
II. Supercomputer
III. Microcomputer
IV. Minicomputer
Select the correct sequence:
(A) III, IV, I, II
(B) III, I, IV, II
(C) IV, III, I, II
(D) I, IV, III, II

61. A computer embedded inside a washing machine or a microwave oven to control its specific operations is classified as a:
(A) Supercomputer
(B) Mainframe Computer
(C) Embedded Computer
(D) Analog Computer

62. Which of the following is considered an Open-Source Operating System?
(A) Microsoft Windows
(B) Linux
(C) Apple macOS
(D) iOS

63. What is the fundamental function of the CPU in a computer system?
(A) To store data permanently even without power
(B) To connect the computer to the internet
(C) To display graphical output to the user
(D) To fetch, decode, and execute instructions

64. Which of the following best describes 'Versatility' as a characteristic of a computer?
(A) The ability to execute diverse types of tasks effectively
(B) The ability to perform complex mathematical calculations at extreme speeds
(C) The ability to operate continuously without any human intervention or maintenance
(D) The ability to store virtually unlimited amounts of digital data indefinitely

65. What is the full form of PMGDISHA, a major initiative of the Indian Government related to computer literacy?
(A) Prime Minister Global Digital Society Abhiyan
(B) Pradhan Mantri Gramin Data Security Abhiyan
(C) Prime Minister Gramin Digital Saksharta Abhiyan
(D) Pradhan Mantri Global Digital Saksharta Abhiyan

66. Which type of memory is non-volatile and contains the startup instructions (BIOS) for a computer?
(A) ROM
(B) RAM
(C) Cache
(D) Virtual Memory

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67. Which term refers to a network that covers a small geographical area, such as a single office building or school campus?
(A) WAN (Wide Area Network)
(B) MAN (Metropolitan Area Network)
(C) PAN (Personal Area Network)
(D) LAN (Local Area Network)

68. The primary purpose of an antivirus software is to:
(A) Compress large files and archives to save system disk space
(B) Protect systems against malware infections
(C) Speed up and optimize local network internet connections
(D) Design interactive websites and modern web pages

69. Which component acts as the main circuit board of a computer, connecting the CPU, memory, and all peripheral devices?
(A) Hard Drive
(B) Power Supply Unit
(C) Motherboard
(D) Network Interface Card

70. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): ROM is considered volatile memory.
Reason (R): The data in ROM is lost when the power supply is turned off.
In the context of the above statements, which of the following options is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Both Assertion (A) and Reason (R) are false.

71. Find the odd one out among the following computer security threats.
(A) Firewall
(B) Trojan Horse
(C) Computer Virus
(D) Ransomware

72. Which of the following is a commonly used web browser to access the internet?
(A) Microsoft Excel
(B) Google Chrome
(C) Windows Defender
(D) Linux Ubuntu

73. What does an IP address primarily serve as in a computer network?
(A) A physical locking mechanism used for securing network cables
(B) A unique identifier for network devices
(C) A graphical software application designed to edit digital images
(D) A dedicated hardware storage unit for holding network files

74. Which major IT policy framework aims to deliver services electronically and create a seamless integration across various government departments in India?
(A) National e-Governance Plan
(B) Make in India National Campaign
(C) Skill India Development Mission
(D) Startup India Enterprise Scheme

75. Consider the following statements regarding the Information Technology Act, 2000:
I. It provides a legal framework for electronic governance.
II. It legally recognizes electronic signatures.
III. It regulates physical vehicular traffic on national highways.
Which combination of statements is correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

76. What does 'Phishing' refer to in the context of computer security?
(A) The technical process of repairing corrupted sector data on a hard drive
(B) Connecting multiple network computers using physical underwater cables
(C) Upgrading and updating system files in a computer operating system
(D) A cyber-attack to steal sensitive user data

77. Which shortcut key is universally used to 'Undo' the last action in most application software like MS Word?
(A) Ctrl + X
(B) Ctrl + Y
(C) Ctrl + Z
(D) Ctrl + C

78. In a relational database, what is a 'Primary Key'?

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(A) The security password used to open and decrypt a database file
(B) A unique identifier for each table record
(C) The mandatory first column present in every database table
(D) A specific physical key on the keyboard used to execute SQL queries

79. The Central Processing Unit (CPU) consists of which two main sub-components?
(A) RAM and ROM
(B) Input Unit and Output Unit
(C) Hard Disk and CD-ROM
(D) ALU and CU

80. Match List I with List II:
List I: (Storage Capacity Unit)
P. 1 Byte
Q. 1 Kilobyte (KB)
R. 1 Megabyte (MB)
S. 1 Gigabyte (GB)
List II: (Equivalent Value)
1. 1024 Megabytes
2. 8 Bits
3. 1024 Bytes
4. 1024 Kilobytes
Which of the following options represents the correct match?
(A) P-2, Q-3, R-4, S-1
(B) P-3, Q-2, R-1, S-4
(C) P-2, Q-4, R-3, S-1
(D) P-1, Q-2, R-3, S-4

81. Which protocol is fundamentally used for transmitting hypertext documents over the World Wide Web?
(A) FTP
(B) SMTP
(C) HTTP
(D) POP3

82. What is the full form of URL in the context of internet web addresses?
(A) Uniform Resource Locator
(B) Universal Resource Link
(C) Uniform Registered Link
(D) Universal Routing Locator

83. Which file extension is correctly matched with its typical file type?
(A) .pdf - Plain text document
(B) .mp3 - Video file
(C) .exe - Audio file
(D) .jpg - Image file

84. Which of the following is NOT an input device?
(A) Scanner
(B) Monitor
(C) Barcode Reader
(D) Microphone

85. Consider the following statements regarding secondary storage media:
I. A Solid State Drive (SSD) is generally faster than a traditional Hard Disk Drive (HDD).
II. A CD-ROM uses laser technology to read data.
III. Secondary memory is volatile and loses data when power is turned off.
IV. Pen drives connect to the computer via USB ports.
Which combination of statements is correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

86. The concept of "Cloud Computing" primarily refers to:
(A) Forecasting meteorological weather conditions using supercomputers
(B) Using specialized airborne devices to transmit local wireless signals
(C) Storing system data exclusively on local physical floppy disk drives
(D) Delivering computing services over the internet

87. In MS Excel, the intersection of a row and a column is called a:
(A) Cell
(B) Record
(C) Field
(D) Block

88. What is the primary purpose of the 'BCC' field when composing an email?
(A) To officially mark and prioritize the email message as highly important
(B) To hide recipient addresses from other email recipients
(C) To securely attach and compress large file documents to the email
(D) To automatically translate incoming email text into multiple languages

89. Which of the following numbers represents the binary equivalent of the decimal number 10?
(A) 1001

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(B) 1010
(C) 1100
(D) 1011

90. Which of the following represents the correct order of the memory hierarchy from fastest to slowest access time?
(A) Cache Memory, CPU Registers, Main Memory (RAM), Secondary Storage
(B) CPU Registers, Cache Memory, Main Memory (RAM), Secondary Storage
(C) Secondary Storage, Main Memory (RAM), Cache Memory, CPU Registers
(D) Main Memory (RAM), CPU Registers, Secondary Storage, Cache Memory

91. What is the fundamental utility of the 'Mail Merge' feature in MS Word?
(A) To combine multiple external email inbox accounts into one unified mailbox
(B) To merge multiple separate Word text documents into a single master PDF file
(C) To generate personalized documents automatically from a database
(D) To merge high-resolution images and text elements in a modern page layout

92. Identify the incorrect statement regarding the Internet.
(A) It functions as a massive global system of interconnected computer networks
(B) No single private entity or central government owns the entire Internet infrastructure
(C) It relies on the standardized TCP/IP protocol suite to communicate across networks
(D) It is a private network restricted to government officials

93. A 'Trojan' in computer terminology refers to:
(A) A dedicated internal hardware component that boosts graphics processing speed
(B) A protective network wall designed to block unauthorized incoming access
(C) Malicious software disguised as a legitimate program
(D) A specialized type of high-speed glass optical fibre networking cable

94. The process of starting or restarting a computer is called:
(A) Compiling
(B) Booting
(C) Formatting
(D) Debugging

95. What does the term 'GUI' stand for in operating systems?
(A) General Utility Interface
(B) Global User Identification
(C) Graphic Unit Integration
(D) Graphical User Interface

96. Which government scheme facilitates the establishment of access points for delivery of essential public utility services, social welfare schemes, and healthcare in rural India?
(A) Common Service Centres
(B) Skill India Training Centres
(C) NITI Aayog Innovation Hubs
(D) Make in India Retail Outlets

97. In a computer network, what is the term used for the physical or logical layout of the nodes and connections?
(A) Protocol
(B) Domain
(C) Topology
(D) Bandwidth

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98. What is the full form of DNS in internet terminology?
(A) Domain Name System
(B) Digital Network Service
(C) Data Node Server
(D) Dynamic Network System

99. Which of the following best describes the function of a 'Search Engine'?
(A) It continuously scans local computer systems for physical hardware errors
(B) It is a specialized physical device used to boost overall internet speed
(C) It is a dedicated antivirus software tool that searches for system malware
(D) A web tool designed to search for online information

100. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Use of strong, complex passwords is recommended for all online accounts.
Reason (R): Complex passwords are mathematically harder for automated cracking tools to guess.
In the context of the above statements, which of the following options is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

101. Which communication medium utilizes light pulses to transmit data at very high speeds over long distances?
(A) Coaxial Cable
(B) Twisted Pair Cable
(C) Optical Fiber
(D) Bluetooth

102. In MS PowerPoint, which view is specifically designed to show a miniature version of all the slides in a presentation, making it easy to rearrange them?
(A) Slide Master View
(B) Normal View
(C) Reading View
(D) Slide Sorter View

103. Which of the following is considered an emerging technology characterized by a distributed, decentralized, public ledger?
(A) Blockchain
(B) Relational Database
(C) Mainframe Storage
(D) Punched Cards

104. What is the fundamental goal of the BHIM (Bharat Interface for Money) application?
(A) To book intercity railway and train tickets exclusively online
(B) To enable secure cashless payments via mobile phones
(C) To fill out applications and apply for an Indian passport online
(D) To check and access rural agricultural loan land records online

105. Consider the following statements regarding Aadhaar and its IT infrastructure:
I. Aadhaar provides a unique 12-digit identity number.
II. It uses biometric data, including fingerprint and iris scans.
III. It is issued by the Ministry of External Affairs.
Which combination of statements is correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

106. In basic computer terminology, a 'Bug' refers to:
(A) An error or flaw in a computer program
(B) An external physical hardware peripheral device
(C) A specialized malicious software hacking tool
(D) A high-speed multi-core central processor unit

107. Which shortcut key is used to save a document in MS Word?
(A) Ctrl + P
(B) Ctrl + O
(C) Ctrl + S
(D) Ctrl + N

108. The process of converting plain text into a scrambled, unreadable format for security purposes is known as:
(A) Decryption
(B) Compression
(C) Formatting
(D) Encryption

109. Which of the following network topologies features a central node (like a hub or switch) to which all other devices are directly connected?
(A) Ring Topology
(B) Bus Topology
(C) Star Topology
(D) Mesh Topology

110. Match List I with List II:
List I: (File Extension)
P. .docx
Q. .xlsx
R. .pptx
S. .html
List II: (Associated Application/Format)
1. Web Page
2. MS Word
3. MS PowerPoint
4. MS Excel
Which of the following options represents the correct match?
(A) P-2, Q-4, R-3, S-1
(B) P-2, Q-3, R-4, S-1
(C) P-4, Q-2, R-1, S-3
(D) P-1, Q-4, R-3, S-2

111. Which term describes the unauthorized copying and distribution of proprietary software?
(A) Hacking
(B) Phishing

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(C) Plagiarism
(D) Piracy

112. What is the full form of Wi-Fi, the popular wireless networking technology?
(A) Wireless Fidelity
(B) Wireless Fiber
(C) Wired Field
(D) Wireless Finder

113. Find the odd one out among the following operating systems.
(A) Windows 11
(B) Android
(C) MS Word
(D) macOS

114. Which layer of the OSI networking model is responsible for routing data packets from a source to a destination across multiple networks?
(A) Network Layer
(B) Physical Layer
(C) Data Link Layer
(D) Application Layer

115. Consider the following statements regarding utility software:
I. Disk Defragmenter is an example of utility software.
II. Antivirus programs are considered utility software.
III. Utility software helps manage, maintain, and control computer resources.
IV. MS Excel is the most common utility software used by administrators.
Which combination of statements is correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

116. The "Internet of Things" (IoT) is best defined as:
(A) A localized internal intranet network designed for a small business
(B) Physical objects embedded with sensors to exchange data
(C) A theoretical maximum speed limit for optical internet connections
(D) A strict governmental regulation governing public internet usage

117. In MS Excel, formulas must always begin with which symbol?
(A) +
(B) @
(C) =
(D) #

118. Which government portal acts as a single window for citizens to file Right to Information (RTI) applications online?
(A) DigiLocker
(B) Vahan
(C) Bhoomi
(D) RTI Online

119. A gigahertz (GHz) is an indicator of which property of a CPU?
(A) Clock speed
(B) Storage capacity
(C) Network bandwidth
(D) Screen resolution

120. Which protocol is primarily responsible for sending and routing emails across the internet?
(A) FTP
(B) SMTP
(C) HTTP
(D) DHCP

121. What happens when a user presses Ctrl + C followed by Ctrl + V?
(A) The selected item is cut and then pasted.
(B) The selected item is copied and then pasted.
(C) The selected item is formatted and then saved.
(D) The selected item is deleted and then recovered.

122. The physical parts of a computer that you can touch and see are collectively known as:
(A) Hardware
(B) Software
(C) Firmware
(D) Malware

123. The National Informatics Centre (NIC) of India is predominantly responsible for:
(A) Designing all smartphone hardware and consumer electronics in India
(B) Manufacturing indigenous high-performance computer microprocessors
(C) Providing IT and e-governance support to governments
(D) Regulating private commercial telecommunication enterprise companies

124. Which of the following is NOT an example of a web search engine?

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(A) Google Search
(B) Bing Search
(C) Yahoo Search
(D) Firefox

125. Consider the following statements regarding the Information Age:
I. It is characterized by the shift from traditional industry to an economy based on information technology.
II. The proliferation of personal computers accelerated its onset.
III. It resulted in a massive decrease in global data production.
Which combination of statements is correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

126. A program designed to destroy data on your computer, which can travel to "infect" other computers, is called a:
(A) Firewall
(B) Virus
(C) Utility
(D) Driver

127. Which category of computers is most commonly utilized as a personal laptop for academic study?
(A) Supercomputer
(B) Mainframe Computer
(C) Minicomputer
(D) Microcomputer

128. What is the full form of PDF, a widely used file format for documents?
(A) Portable Document Format
(B) Printed Document File
(C) Public Data Format
(D) Personal Document Folder

129. If you want to make the text bold in MS Word, which keyboard shortcut should you use?
(A) Ctrl + I
(B) Ctrl + U
(C) Ctrl + B
(D) Ctrl + K

130. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): E-governance promotes transparency in government operations.
Reason (R): Digital records are easier to track, audit, and make available to the public than traditional paper files.
In the context of the above statements, which of the following options is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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131. Which base defines the binary number system used by modern digital computers?
(A) Base 2
(B) Base 8
(C) Base 10
(D) Base 16

132. The Unified Payments Interface (UPI) was developed in India by which organisation?
(A) NITI Aayog
(B) NPCI
(C) Reserve Bank of India (RBI)
(D) State Bank of India (SBI)

133. Which of the following is considered an output device that converts digital text into physical tactile dots for the visually impaired?
(A) Optical Mark Reader (OMR) Scanner
(B) Analog Gaming Joystick
(C) Braille Embosser
(D) Light Pen Input Device

134. Identify the correct statement regarding Artificial Intelligence (AI).
(A) Modern AI systems are fundamentally incapable of learning from new data
(B) Artificial intelligence served as the core technology of first-generation computers
(C) AI software entirely eliminates and replaces the physical need for computer hardware
(D) AI is the simulation of human intelligence in machines

135. Match List I with List II:
List I: (IT Term)
P. Bandwidth
Q. Firewall
R. Malware
S. ISP
List II: (Definition)
1. A company that provides internet access
2. Malicious software designed to cause harm
3. Maximum rate of data transfer across a

given path
4. Security system that monitors and controls network traffic

Which of the following options represents the correct match?
(A) P-3, Q-4, R-2, S-1
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-1, R-2, S-4
(D) P-1, Q-4, R-2, S-3

136. What is the fundamental role of an Operating System (OS)?
(A) To design and render high-quality graphics for modern video games
(B) To act as an interface between hardware and the user
(C) To act as a physical protective barrier against dust entering the CPU
(D) To write source code for new software applications automatically

137. Which of the following represents a major benefit of obtaining computer literacy?
(A) The technical ability to bypass legal security systems using advanced hacking
(B) Enhanced employability and access to digital services
(C) The total elimination of any future need for basic reading and writing skills
(D) Guaranteed complete personal immunity to all forms of online cyber fraud

138. Consider the following statements about the Jan Suvidha Kendras (Common Service Centres) in Uttar Pradesh:
I. They are designed to deliver digital services to rural and remote citizens.
II. They offer services like utility bill payments and certificate issuance.
III. They operate entirely without internet connectivity.
IV. They are a crucial component of the Digital India initiative.

Which combination of statements is correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

139. Which of the following is an example of System Software?
(A) Web Browser
(B) Media Player
(C) Device Driver
(D) Word Processor

140. What does the term "Spam" commonly refer to in Information Technology?
(A) A modern high-speed broadband fiber internet connection
(B) A specialized type of highly secure non-volatile computer memory
(C) A government digital empowerment initiative for rural agriculture
(D) Unsolicited and unwanted bulk email messages

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ANSWERS

1. (A) Latin
The word computer originates from the Latin term computare, which translates directly to calculate, compute, or reckon together. Historically, it referred to human individuals who carried out complex numerical calculations before electronic machines were developed. Over centuries, this fundamental linguistic root evolved significantly to define modern automated electronic data processing systems.

2. (C) Data represents raw facts and figures, whereas information is processed and meaningful data.
Data consists of unprocessed, raw facts, symbols, or observations that lack contextual meaning when viewed independently. In contrast, information is produced when raw data is structured, contextually organized, and processed into a meaningful format. This transformation enables human users or computer systems to draw conclusions, understand context, and make informed operational decisions.

3. (A) Abacus
The abacus is universally acknowledged as the earliest known mechanical calculating tool, invented thousands of years ago in ancient civilizations. Operating through a framework of movable beads arranged along parallel wires, it performed fundamental arithmetic operations like addition and subtraction. It established foundational principles for physical counting devices that eventually led to computing.

4. (D) Analytical Engine
Charles Babbage earned the title of the father of computing due to his conceptual design of the Analytical Engine in the nineteenth century. This mechanical device incorporated essential components of modern digital computers, including an arithmetic logic unit known as the mill, integrated memory, sequential control, and punched card input-output capabilities.

5. (B) Electronic Numerical Integrator and Computer
The acronym ENIAC represents Electronic Numerical Integrator and Computer, which was constructed between 1943 and 1945 at the University of Pennsylvania. Recognized as one of the earliest fully electronic, general-purpose digital computing machines, it utilized thousands of vacuum tubes to compute complex military ballistic trajectories at unprecedented high operational computing speeds.

6. (C) Emotional Intelligence
Computers are electronic machines defined by core operational characteristics such as high processing speed, high accuracy, vast storage capacity, and diligence. However, they lack human feelings, consciousness, personal empathy, and emotional intelligence, operating strictly according to pre-written algorithms, user instructions, and programmed logic without experiencing subjective feelings or personal opinions.

7. (D) Ada Lovelace
Ada Lovelace is historically credited as the world's first computer programmer. Working alongside Charles Babbage, she analyzed his proposed Analytical Engine and authored an algorithm designed to calculate Bernoulli numbers using the machine. Her visionary notes recognized that computing engines could manipulate symbols beyond basic mathematical calculations, anticipating modern computer software capabilities.

8. (A) Vacuum Tube
First-generation computers, manufactured roughly between 1940 and 1956, depended on vacuum tubes as their primary electronic component for circuitry and CPU functions. These large glass valves controlled electric current flow, but they generated immense physical heat, consumed significant amounts of electricity, and caused frequent system hardware breakdowns due to burnt-out component bulbs.

9. (B) They used transistors instead of bulky vacuum tubes.
Second-generation computers replaced fragile vacuum tubes with solid-state transistors, which were invented in 1947. Transistors made computers noticeably smaller, faster, cheaper,

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more energy-efficient, and far more reliable than their predecessors. This breakthrough technology enabled major software advancements, including the development of early assembly and high-level programming languages like FORTRAN and COBOL.

10. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Vacuum tubes used as basic circuit elements in first-generation computers produced substantial thermal energy during operation. Because excessive heat accumulation damaged delicate electrical connections and compromised processing reliability, massive air conditioning and specialized cooling infrastructure were required to prevent constant overheating, rendering both assertion and reason completely valid and directly causally connected.

11. (A) Punched Cards
Punched cards were the standard secondary storage medium and primary data input mechanism during the first generation of electronic computing. Originally designed for mechanical tabulating machines, these stiff paper cards represented digital instructions and binary data through presence or absence of punched holes, allowing users to enter programs sequentially before magnetic storage evolved.

12. (C) Integrated Circuit
Third-generation computers, developed during the mid-1960s to 1970s, were defined by the integration of Integrated Circuits, commonly known as silicon microchips. Invented by Jack Kilby and Robert Noyce, an integrated circuit placed hundreds of transistors onto a single tiny silicon wafer, dramatically increasing computing speed while drastically reducing computer physical size.

13. (D) Diligence
Diligence is the computational characteristic reflecting a computer's capacity to execute millions of complex tasks and calculations continuously without fatigue, boredom, loss of concentration, or human error. Unlike human operators who experience fatigue and declining performance during long operational hours, a computer executes repetitive commands with identical precision and speed indefinitely.

14. (C) TIFRAC
TIFRAC, an abbreviation for Tata Institute of Fundamental Research Automatic Calculator, was the first electronic computer developed indigenously in India. Commissioned officially in February 1960 at TIFR in Mumbai, it utilized vacuum tubes and served as a foundational milestone for scientific research, software engineering, and nuclear calculations within Indian academic infrastructure.

15. (A) I and II only
Charles Babbage designed the Analytical Engine with architectural components mirroring modern computers. The Mill functioned as the primary processing unit executing arithmetic operations, while the Store acted as memory to hold numbers and intermediate results. However, modern graphical user interfaces did not exist, as input and output relied entirely on punched cards.

16. (D) John von Neumann
Mathematician John von Neumann formulated the stored-program computer architecture in 1945. This revolutionary architectural framework proposed that computer program instructions and data should be stored in the same central electrical memory address space. This allowed computers to modify programs rapidly without needing physical rewiring, forming the basis for modern digital computing.

17. (A) Microprocessor
The transition into fourth-generation computing was driven by the invention of microprocessors using Large Scale Integration and Very Large Scale Integration technology. By integrating thousands of transistors and complete CPU functions onto a single semiconductor silicon chip, microprocessors dramatically reduced physical dimensions, lowered production costs, and spawned personal microcomputing across the world.

18. (D) Fifth Generation
Fifth-generation computing focuses on Artificial Intelligence, natural language processing, parallel hardware structures, and Ultra Large Scale Integration technology. Aiming to create intelligent devices capable of learning, self-organization, and complex problem-solving, this ongoing computing phase shifts from traditional strict algorithmic execution toward adaptive

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cognitive computing, voice recognition, and autonomous mobile robotics.

19. (A) Analog, Digital, Hybrid
Computers are categorized based on their working principles into analog, digital, and hybrid systems. Analog computers process continuous physical quantities like voltage or pressure. Digital computers process discrete binary data in symbolic zero and one formats. Hybrid computers integrate characteristics of both, utilizing analog fronts for measurements and digital cores for processing.

20. (A) P-2, Q-4, R-1, S-3
The historical evolution of computing hardware is classified across distinct technological generations. First-generation systems relied on vacuum tubes for basic circuitry. Second-generation systems introduced discrete transistors. Third-generation systems incorporated integrated circuits containing multiple transistors on single chips. Fourth-generation systems adopted microprocessors combining entire processing units onto semiconductor silicon microchip dies.

21. (B) Analog Computer
Analog computers measure and process physical quantities that vary continuously over time, such as mechanical motion, electrical voltage, hydraulic pressure, or ambient temperature. Rather than converting values into symbolic binary numbers, they represent variables through physical phenomena, making them suitable for real-time scientific monitoring and dynamic direct physical simulation computational tasks.

22. (C) Integrated Circuit
In electronic hardware, IC stands for Integrated Circuit, which combines interconnected electronic components such as transistors, diodes, resistors, and capacitors onto a single microchip made of semiconductor material. Developed in the late 1950s, integrated circuits eliminated discrete hand-wired circuits, revolutionizing computer engineering by dramatically reducing physical size and electrical power requirements.

23. (D) Hybrid Computer
Hybrid computers combine functional features of both analog and digital systems. In intensive care unit monitors, analog sensors continuously measure physical biological signals like heart rates, blood pressure, and body temperature. The internal hybrid processor then converts these continuous measurements into discrete digital values for precise digital numerical display and alarms.

24. (D) Supercomputer
Supercomputers represent the most powerful, physically largest, and most expensive category of computational hardware. Engineered with thousands of interconnected parallel processors, they calculate floating-point operations at extreme speeds. Consequently, they are deployed for complex scientific challenges, including global climate modelling, nuclear simulation, quantum physics, molecular analysis, and weather forecasting operations.

25. (B) I, II and IV
Modern computers possess high operational speed, processing millions of instructions per second while retaining large data storage capabilities for long-term retrieval. Because they follow programmed instructions without subjective human consciousness, they cannot make spontaneous self-decisions. However, their accuracy remains constant across massive volumes of data, making statements I, II, and IV correct.

26. (A) CPU Registers
CPU registers represent the fastest, most immediate form of memory in computer systems. Built directly inside the central processing unit microarchitecture, these tiny storage locations hold data operands, memory addresses, and execution instructions currently being processed by the control unit and arithmetic logic unit, operating at CPU clock speeds with minimal latency.

27. (C) They are far more powerful than modern supercomputers.
Microcomputers, including desktop personal computers, laptops, tablets, and smartphones, are single-user devices powered by microprocessors and designed for individual utility. While highly efficient for personal computing, enterprise productivity, and internet access, microcomputers are exponentially less powerful in raw computational performance, floating-point execution, and parallel processing capability when compared directly with supercomputers.

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28. (D) Quantum mechanics and molecular modelling
Supercomputers process vast mathematical computations simultaneously, making them indispensable in scientific domains like quantum mechanics, molecular dynamics, nuclear reaction modelling, astrophysics simulations, and genome sequencing. Routine administrative tasks like basic word processing, small business payroll, or attendance tracking require negligible processing power, for which standard desktop microcomputers are entirely sufficient.

29. (C) The use of systems, networks, and devices to process and exchange data
Information Technology encompasses the overarching field of engineering, computer hardware, software applications, networking infrastructure, and telecommunications used to create, store, process, secure, and exchange digital data. It integrates computing systems with communication networks to deliver operational capabilities across businesses, administrative bodies, educational platforms, and digital services globally in modern society.

30. (B) Input, Process, Output, Storage
The standard computer data processing cycle follows a logical four-phase sequence: Input, Process, Output, and Storage. First, raw data enters the system through input peripherals. Next, the central processing unit manipulates and executes logic on the data. Then, processed information is displayed via output devices, and finally saved in digital storage.

31. (D) The Internet
The Internet is the main catalyst driving the modern Information Technology revolution. By connecting millions of computers, server networks, and mobile devices across the world, it enables instantaneous data communication, worldwide e-commerce, real-time messaging, global knowledge sharing, and cloud computing services, rendering older analog communication systems obsolete in digital society.

32. (C) 2000
The Information Technology Act, 2000 was enacted by the Indian Parliament in May 2000 and received presidential assent in June 2000, coming into official effect in October 2000. It stands as India's primary legislation governing electronic commerce, cybercrime penalties, digital authentication, electronic signatures, and legal recognition of digital electronic documents.

33. (C) E-commerce and electronic records
The IT Act, 2000 was formulated to grant formal legal validity and recognition to electronic commercial transactions, online data transmissions, and digital record keeping. By providing a legal framework for electronic signatures and online governance, the statute replaced paper-based legal filing mandates, facilitating secure digital business and e-commerce across India.

34. (B) Section 66
Section 66 of the Information Technology Act, 2000 prescribes legal punishment for computer-related offenses, specifically addressing hacking, unauthorized system access, data theft, and deliberate network damage. Individuals committing such fraudulent acts face imprisonment terms up to three years along with substantial monetary fines under Indian cyber security penal code provisions.

35. (D) To transform India into a digitally empowered knowledge economy
Launched in July 2015, the Digital India programme is a flagship initiative of the Government of India designed to transform the country into a digitally empowered society and knowledge economy. The vision aims to bridge the digital divide by improving high-speed online infrastructure, delivering government services electronically, and enhancing digital literacy.

36. (B) Mandatory physical presence for all government services
The Digital India initiative rests upon three core vision pillars: digital infrastructure as a core utility to every citizen, governance and services on demand, and digital empowerment of citizens. Requiring mandatory physical presence contradicts the central goal of e-governance, which focuses on providing online, paperless, and cashless public services directly.

37. (C) e-District
The e-District portal managed by the Government of Uttar Pradesh functions as an electronic governance portal providing citizen-centric public services online. Citizens access this platform to apply for, track, and receive official government certificates, including income, caste,

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domicile, and birth certificates, eliminating unnecessary physical visits to administrative district office headquarters.

38. (D) Unified Mobile Application for New-age Governance
UMANG stands for Unified Mobile Application for New-age Governance. Developed by the Ministry of Electronics and Information Technology alongside the National e-Governance Division, it serves as a single integrated mobile application providing Indian citizens access to central, state, and local government services, utility payments, and digital social welfare schemes and initiatives.

39. (A) DigiLocker
DigiLocker is a flagship e-governance platform under the Digital India initiative that provides secure cloud storage for Indian citizens. It allows individuals to access, store, and share digital authentications of official documents, including driving licenses, vehicle registrations, academic mark sheets, and PAN cards, granting these digital documents full official legal validity.

40. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Computer literacy is indispensable in modern public administration because state governance relies heavily on digital platforms to process data, manage records, and deliver e-governance services. Administrators require digital competencies to utilize digital infrastructure efficiently, directly explaining why computer training is essential for civil service workers, making both statements true and causally linked.

41. (B) Mainframe
Mainframe computers are high-performance computing systems engineered for bulk data processing, high throughput, and enterprise-scale reliability. Large institutions such as banks, insurance companies, government census departments, and airlines deploy mainframes to process millions of complex transactions concurrently while guaranteeing continuous operational availability and high system hardware data security.

42. (B) Second Generation
High-level programming languages such as FORTRAN (Formula Translation) and COBOL (Common Business-Oriented Language) gained prominence during the second generation of computing. Transitioning away from tedious machine code and low-level assembly scripts, these languages allowed computer programmers to write instructions using English words and mathematical expressions, greatly accelerating software application development.

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43. (C) Cyber threats and data breaches
While Information Technology offers speed, efficiency, and interconnectedness, it introduces major vulnerabilities surrounding cyber threats, data breaches, privacy violations, and malicious malware attacks. Unauthorized access to confidential enterprise data, personal identity theft, and ransomware attacks represent primary challenges facing organizations and governments managing digitized networks in contemporary digital global society.

44. (D) Digital Divide
The term Digital Divide identifies the economic, social, and demographic inequality between demographics with full access to modern information technologies—such as high-speed internet, smartphones, and computers—and those without such access. Overcoming this divide is essential for ensuring equal opportunities in education, employment, financial inclusion, and civic engagement across modern society.

45. (A) I and II only
Information Technology benefits agriculture by supplying accurate weather forecasts, climate warnings, and direct market price information to farmers via mobile applications and online portals. However, technology cannot replace physical agricultural inputs like water, fertilizers, soil nutrients, or sunlight required for crop growth, making statements I and II completely valid and accurate.

46. (B) Keyboard
In hardware taxonomy, a keyboard is an input device used to enter alphanumeric text, commands, and key combinations into a computer system. Conversely, monitors, printers, and projectors function exclusively as output devices designed to display visual output, print hard copies, or project images onto external display surfaces for human users.

47. (D) Garbage In, Garbage Out
In computer science, GIGO stands for Garbage In, Garbage Out. This foundational concept highlights that computers process input data logically without subjective discretion. If incorrect, flawed, or corrupted data is entered as input, the system will inevitably output inaccurate or meaningless results, underscoring the vital importance of data input integrity.

48. (A) Accuracy
The Garbage In, Garbage Out principle directly illustrates the computer characteristic of accuracy. Computers execute mathematical operations and logical comparisons with complete precision, strictly following programmed code. However, the correctness of final calculations depends on the accuracy of input data, as errors stem from faulty human inputs rather than computational miscalculation.

49. (C) Vijay Bhatkar
Dr. Vijay Bhatkar is widely regarded as the architect of India's supercomputing development. As founding director of C-DAC (Centre for Development of Advanced Computing), he led the indigenous development of PARAM 8000 in 1991, India's first supercomputer, overcoming international technology export restrictions and establishing sovereign national supercomputing research hardware capabilities.

50. (A) P-3, Q-1, R-2, S-4
Information Technology tools serve specific functional sectors. In education, the SWAYAM portal provides free online courses. In medicine, telemedicine connects patients with remote clinical consultations. In finance, internet banking enables digital monetary transactions. In governance, the UMANG mobile application serves as a single portal for accessing public government services online.

51. (D) Silicon
Silicon, an abundant chemical element found in quartz sand, serves as the primary semiconductor material utilized in integrated circuit fabrication. Its unique atomic structure allows controlled electrical conductivity when modified with chemical dopants, enabling microchip manufacturers to construct millions of microscopic transistors and logic gates on tiny semiconductor silicon wafers.

52. (B) Microsoft Word
Application software includes programs designed to accomplish specific end-user tasks, such as word processing, document formatting, and text creation provided by Microsoft Word. In contrast, operating systems like Microsoft Windows, Linux, and Android function as system software, which manages computer hardware resources, memory, and system background operational processes.

53. (C) Microprocessor
The invention of the microprocessor in the early 1970s combined central processing unit components onto a single silicon semiconductor chip. By replacing bulky individual circuits, microprocessors dramatically reduced hardware manufacturing costs and physical dimensions, enabling desktop personal computers, portable laptops, and mobile devices to become affordable mass-market electronic consumer devices.

54. (D) To authenticate electronic records
Under the Information Technology Act, 2000, a digital signature serves as a cryptographically secure mathematical technique used to authenticate electronic records and confirm identity. Created via asymmetric key cryptography, it ensures the authenticity of the sender, guarantees document integrity against tampering, and grants legal enforceability to electronic documents across India.

55. (B) I, II and IV
Smartphones function as compact microcomputers driven by microprocessors. Hybrid computers combine continuous analog signal processing with discrete digital logic. Mainframe systems support thousands of concurrent user connections for enterprise data management. Conversely, supercomputers perform advanced scientific modelling, not basic word processing, making statements I, II, and IV mathematically correct.

56. (B) The application of Information Technology for delivering government services
E-Governance refers to the strategic deployment of Information and Communication Technologies (ICT) by governmental agencies to transform service delivery, streamline administrative workflows, enhance transparency, and empower citizens. It allows public access to state services, tax payments, official registrations, and

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government portals online without requiring physical office visits by the public.

57. (B) HEC-2M
The HEC-2M was India's first digital electronic computer, installed in 1956 at the Indian Statistical Institute in Calcutta. Imported from the British Tabulating Machine Company, this early second-generation machine utilized magnetic drum memory and thermionic valves, playing a historical role in statistical analysis and early computational research in post-independence India.

58. (A) It was a fourth-generation computer based on microprocessors.
TIFRAC (Tata Institute of Fundamental Research Automatic Calculator) was an early first-generation computer constructed using vacuum tubes, magnetic core memory, and paper tape input systems. Designed and developed indigenously in India during the late 1950s and commissioned in 1960, it preceded the invention of microprocessor chips and fourth-generation hardware technology.

59. (D) Fourth Generation
The fourth generation of computers, originating in the 1970s with microprocessor development, introduced desktop computing features including Graphical User Interfaces (GUI) and pointing devices like the computer mouse. Operating systems like Apple Macintosh and Microsoft Windows commercialized desktop icons, windows, menus, and pointers, replacing line-driven command interfaces for consumer computing.

60. (A) III, IV, I, II
Sorting digital computers by relative processing power and cost from lowest to highest yields: Microcomputers, Minicomputers, Mainframe Computers, and Supercomputers. Microcomputers cater to single individual users, Minicomputers handle mid-sized departmental processing, Mainframes manage thousands of concurrent enterprise database operations, and Supercomputers execute high-speed, parallel scientific mathematical computational modeling execution operations.

61. (C) Embedded Computer
An embedded computer is a dedicated microcontroller integrated into non-computing physical appliances like washing machines, microwave ovens, automobiles, and medical devices. Programmed to perform specific dedicated tasks and real-time control functions, these embedded systems operate automatically without requiring user configuration, operating system interfaces, or standard external computer hardware input peripherals.

62. (B) Linux
Linux is an open-source operating system whose underlying source code is freely available to developers for modification, enhancement, and distribution. Created by Linus Torvalds in 1991, Linux contrasts with proprietary commercial operating systems like Microsoft Windows, Apple macOS, and iOS, which restrict underlying source code access and require commercial software licensing.

63. (D) To fetch, decode, and execute instructions
The Central Processing Unit acts as the primary computational hub of a computer system. Operating through the machine cycle, the CPU continually fetches program instructions from main memory, decodes what actions are required, and executes those instructions using its internal Control Unit and Arithmetic Logic Unit before directing output operational results.

64. (A) The ability to execute diverse types of tasks effectively
Versatility describes a computer's capability to execute completely different operational tasks across various domain applications. The same hardware platform can switch seamlessly between computing complex mathematical equations, rendering graphic designs, managing database records, playing audio files, or drafting text documents simply by executing different application software programs tailored for each task.

65. (C) Prime Minister Gramin Digital Saksharta Abhiyan
PMGDISHA stands for Pradhan Mantri Gramin Digital Saksharta Abhiyan. Initiated by the Government of India, this nation-wide digital literacy scheme aims to empower rural households by providing basic digital literacy training, enabling rural citizens to operate computers, access online government services, send emails, and execute digital financial payments completely independently.

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66. (A) ROM
Read-Only Memory (ROM) is a non-volatile semiconductor memory module that retains stored data permanently, even when computer electrical power is switched off. ROM contains crucial system startup firmware, including the Basic Input/Output System (BIOS) or Unified Extensible Firmware Interface (UEFI), required to initialize system hardware during initial computer booting routines.

67. (D) LAN (Local Area Network)
A Local Area Network (LAN) connects computers and peripheral devices within a restricted geographical perimeter, such as a single office building, home, laboratory, or school campus. LANs deliver high data transmission speeds, low latency, and high security, facilitating local resource sharing, including shared files, printers, and high-speed local internet access.

68. (B) Protect systems against malware infections
Antivirus software is a protective utility designed to detect, prevent, quarantine, and eliminate malicious software threats from computer systems. It continuously scans files, downloaded attachments, system memory, and external media for viruses, worms, trojans, ransomware, and spyware, safeguarding system integrity and preventing unauthorized digital security system breaches across networks.

69. (C) Motherboard
The motherboard is the primary printed circuit board inside a computer system. It establishes physical and electrical interconnections between key hardware components, including the central processing unit, system memory modules, storage drives, expansion buses, power delivery circuits, and peripheral input-output interfaces, enabling data communication across system hardware bus architecture.

70. (D) Both Assertion (A) and Reason (R) are false.
Read-Only Memory (ROM) is classified as non-volatile memory, meaning it permanently retains its stored data even when electrical power is disconnected. In contrast, Random Access Memory (RAM) is volatile. Therefore, assertion claims ROM is volatile and reason claims ROM loses data when powered off are both demonstrably false statements.

71. (A) Firewall
A firewall is a network security system—implemented via hardware, software, or both—that monitors and filters incoming and outgoing network traffic based on predefined security rules. While Trojan horses, computer viruses, and ransomware represent malicious malware threats, a firewall serves as a protective defense mechanism to block unauthorized network cyber attacks.

72. (B) Google Chrome
Google Chrome is a popular software web browser application designed to render HTML documents and access resources on the World Wide Web. Web browsers retrieve web pages from web servers via HTTP protocols, whereas Microsoft Excel is a spreadsheet application, Windows Defender is antivirus software, and Linux Ubuntu is an operating system.

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73. (B) A unique identifier for network devices
An IP (Internet Protocol) address is a numerical label assigned to every device connected to a computer network utilizing the Internet Protocol. Serving as a unique network identifier, it enables devices to locate each other, establish network connections, and accurately route data packets across local networks and the global internet.

74. (A) National e-Governance Plan
The National e-Governance Plan (NeGP), formulated by the Indian Government in 2006, was designed to make all government services accessible to citizens online. Comprising various Mission Mode Projects across central and state departments, NeGP established backbone infrastructure like State Data Centres and Common Service Centres to ensure transparent public governance.

75. (A) I and II only
The Information Technology Act, 2000 establishes a comprehensive legal framework regulating electronic governance, e-commerce, digital signatures, and cybercrime in India. While it grants legal validity to digital records and electronic signatures, physical vehicular highway traffic regulation falls under the Motor Vehicles Act, making statements I and II fully correct.

76. (D) A cyber-attack to steal sensitive user data
Phishing is a social engineering cyber-attack where attackers impersonate trustworthy entities via fraudulent emails, fake websites, or text messages. The objective is to deceive victims into revealing sensitive personal information, such as login credentials, credit card numbers, personal identification details, or financial passwords, compromising personal online enterprise user account security.

77. (C) Ctrl + Z
The keyboard shortcut key combination Ctrl + Z is standard across operating systems to execute the Undo command. In software applications like MS Word, text editors, and graphic programs, pressing Ctrl + Z reverses the most recent action, allowing users to restore erased text or cancel mistaken formatting edits instantly.

78. (B) A unique identifier for each table record
In a relational database management system (RDBMS), a primary key is a specific column or set of columns that uniquely identifies every distinct row or record within a table. A primary key must contain unique values and cannot hold null values, ensuring entity integrity and allowing relational tables to link cleanly.

79. (D) ALU and CU
The Central Processing Unit architecture consists of two primary operational units: the Arithmetic Logic Unit (ALU) and the Control Unit (CU). The ALU carries out mathematical calculations and logical evaluation operations, while the Control Unit directs data flow, fetches instructions, and coordinates timing signal operations across all internal computer hardware components.

80. (A) P-2, Q-3, R-4, S-1
Standard digital storage measurements follow a precise binary hierarchy: 1 Byte equals 8 individual bits; 1 Kilobyte (KB) equals 1024 Bytes; 1 Megabyte (MB) equals 1024 Kilobytes; and 1 Gigabyte (GB) equals 1024 Megabytes. These binary power-of-two relationships define system RAM capacity, file sizes, and secondary storage volume performance metrics.

81. (C) HTTP
Hypertext Transfer Protocol (HTTP) is the foundational application-layer network protocol used to transfer webpage media and hypertext files across the World Wide Web. Operating over TCP connection sockets, HTTP enables client web browsers to request resources from remote web servers and receive structured HTML content, styling, and multimedia web scripts.

82. (A) Uniform Resource Locator
URL stands for Uniform Resource Locator, functioning as the unique web address used to identify and locate specific online resources on the Internet. A URL specifies the network access protocol (such as HTTP or HTTPS), the domain hostname or IP address, and the specific directory path pointing to a requested webpage.

83. (D) .jpg - Image file
File extensions identify format specifications and file types for computer operating systems. The extension .jpg (or .jpeg) corresponds to Joint Photographic Experts Group raster image files. In contrast, .pdf represents portable document files, .mp3 denotes compressed audio files, and .exe identifies executable application system files on Windows operating system platforms.

84. (B) Monitor
A computer monitor is an output device designed to visually render text, graphics, video, and user interfaces processed by the system. In contrast, devices like image optical scanners, barcode readers, and audio microphones act as input devices that gather external visual or acoustic data and transmit digital representations into the computer system.

85. (B) I, II and IV
Solid State Drives outperform traditional mechanical hard drives due to flash memory access speeds. Optical CD-ROMs utilize laser technology for data reading, while pen drives connect through USB ports. However, secondary storage is non-volatile, retaining stored data permanently after power off, rendering statement III false and statements I, II, and IV correct.

86. (D) Delivering computing services over the internet
Cloud Computing refers to delivering scalable computing services—including remote servers, data storage, databases, networking, software applications, and processing power—over the internet. Rather than maintaining local physical servers or hard drives, organizations and users rent access to cloud infrastructure provided by

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data centers, improving resource flexibility and overall computational cost savings.

87. (A) Cell
In spreadsheet software applications like MS Excel, a cell represents the basic organizational unit formed by the intersection of a horizontal row and a vertical column. Each cell is identified by a unique cell address consisting of a column letter and row number, holding data, numbers, text formatting, or calculation formulas.

88. (B) To hide recipient addresses from other email recipients
The BCC (Blind Carbon Copy) field in email platforms allows the sender to deliver an email message to multiple recipients while concealing their email addresses from everyone listed in the To, CC, or BCC fields. This preserves recipient privacy, prevents spammers from harvesting email addresses, and maintains confidentiality during broad communications.

89. (B) 1010
The decimal number 10 is converted to positional binary base-2 representation by evaluating powers of two: $8 + 0 + 2 + 0$. Corresponding to positional binary bit weights 2^3 (8), 2^2 (4), 2^1 (2), and 2^0 (1), setting bits for 8 and 2 yields 1010 in standard binary representation.

90. (B) CPU Registers, Cache Memory, Main Memory (RAM), Secondary Storage
The memory hierarchy arranges digital computer storage by latency and data access speed. Located inside the processor core, CPU registers provide fastest access, followed by high-speed SRAM cache memory. Main memory (RAM) operates slower than cache, while secondary storage media (HDDs and SSDs) provide high capacity but display slowest access times.

91. (C) To generate personalized documents automatically from a database
The Mail Merge feature in word processing applications like MS Word automates batch production of personalized letters, labels, envelopes, and emails. By combining a main template document containing standard body text with a structured data source (such as an Excel spreadsheet or database containing names and addresses), unique individual records are generated seamlessly.

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92. (D) It is a private network restricted to government officials
The Internet is a public, globally interconnected mesh of computer networks accessible to individuals, commercial organizations, educational bodies, and governments worldwide. Operating via standard TCP/IP networking protocols, it is not owned by any single entity, nor is it a private network restricted to government officials, contrasting with localized private operational intranets.

93. (C) Malicious software disguised as a legitimate program
A Trojan horse is a form of malware disguised as useful, legitimate, or harmless software to trick users into downloading and executing it. Once activated on a target system, Trojans perform unauthorized actions in the background, such as stealing passwords, granting remote backdoor access to cybercriminals, or downloading secondary malware infections.

94. (B) Booting
Booting is the initialization process of loading a computer operating system into RAM when power is turned on (cold boot) or restarted (warm boot). During booting, the system executes instructions stored in non-volatile ROM firmware (BIOS/UEFI), performs Power-On Self-Tests (POST), initializes hardware, and loads kernel modules to complete operational readiness.

95. (D) Graphical User Interface
GUI stands for Graphical User Interface. It provides an intuitive visual system interface that allows computer users to interact with software through graphical elements such as icons, windows, buttons, menus, and pointers, eliminating the need to type complex text commands into traditional text command-line system operating interface environments.

96. (A) Common Service Centres
Common Service Centres (CSCs) are front-end service delivery points established under the Digital India scheme to deliver e-governance, social welfare benefits, healthcare access, financial services, and utility payment options to citizens living in rural and remote regions of India, bridging the digital divide through localized digital infrastructure service network access.

97. (C) Topology
In network engineering, network topology describes the structural layout—either physical hardware arrangement or logical data flow path—of interconnected nodes, cables, and communication links. Standard network topologies include Star, Bus, Ring, Mesh, and Tree configurations, each possessing distinct advantages regarding fault tolerance, data routing performance, and implementation installation hardware deployment cost.

98. (A) Domain Name System
DNS stands for Domain Name System. Functioning as the directory index of the Internet, DNS translates human-readable domain hostnames (such as www.example.com) into numerical IP addresses (such as 192.0.2.1) required by network routing protocols to establish connection requests and route web browser traffic accurately across web host servers worldwide.

99. (D) A web tool designed to search for online information
A search engine is a software application designed to search and index information hosted on the World Wide Web. Utilizing automated web crawlers or spiders, search engines collect website text, index content according to key terms, and apply mathematical ranking algorithms to return relevant web results matching user query keywords.

100. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Using strong, complex passwords incorporating uppercase letters, lowercase letters, numbers, and special symbols is a fundamental cybersecurity best practice. Automated dictionary attacks and brute-force software struggle mathematically to crack complex credentials due to the expanded key space combinations, confirming both assertion and reason are true and directly and causally connected.

101. (C) Optical Fiber
Optical fiber cables utilize tiny glass or plastic strands to transmit digital data using modulated light pulses. Relying on total internal reflection, fiber optic networks deliver high bandwidth, minimal signal attenuation, and immunity to electromagnetic interference over vast physical distances, serving as the foundational physical medium for internet enterprise backbones.

102. (D) Slide Sorter View
Slide Sorter View in presentation applications like MS PowerPoint displays thumbnail representations of all slides in horizontal rows on screen. This view provides a bird's-eye perspective, allowing users to rearrange slide order easily via drag-and-drop, apply transition effects, and organize slide content effectively across the entire slide presentation file project.

103. (A) Blockchain
Blockchain technology is a decentralized, distributed ledger system that records digital transactions securely across a peer-to-peer network. Using cryptographic hashing and consensus mechanisms, transactions are grouped into immutable blocks linked chronologically. This structure prevents unauthorized record modification without relying on a centralized administrative authority, underpinning cryptocurrencies and digital smart contracts.

104. (B) To enable secure cashless payments via mobile phones
BHIM (Bharat Interface for Money) is a digital payment application based on the Unified Payments Interface (UPI). Developed by NPCI, BHIM facilitates instant peer-to-peer and peer-to-merchant financial transactions directly between bank accounts using virtual payment addresses, QR codes, or registered mobile phone numbers without requiring cash or physical credit cards.

105. (A) I and II only
Aadhaar provides a unique 12-digit identity number assigned to residents of India based on biometric data (fingerprints and iris scans) and demographic details. However, Aadhaar is issued and managed by the Unique Identification Authority of India (UIDAI) under MeitY, not the Ministry of External Affairs, making statements I and II correct.

106. (A) An error or flaw in a computer program
In software development terminology, a bug refers to an operational error, flaw, defect, or failure in a computer program or system that produces incorrect or unexpected output. The process of searching for, diagnosing, and resolving these programming bugs is called debugging, ensuring

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software executes reliably according to design system requirements.

107. (C) Ctrl + S
The keyboard shortcut Ctrl + S is universally utilized across productivity software applications, including MS Word, MS Excel, and text editors, to trigger the Save command. Executing this shortcut writes current document modifications from volatile RAM to non-volatile secondary storage (such as an SSD or hard drive), preventing data loss.

108. (D) Encryption
Encryption is a cryptographic process that converts readable plain text data into scrambled, unreadable ciphertext using mathematical algorithms and encryption keys. This prevents unauthorized users or cybercriminals from reading intercepted communications. Authorized parties holding the corresponding cryptographic decryption key can revert the unreadable ciphertext back into original intelligible plain text.

109. (C) Star Topology
In Star Topology, every network node—such as computers, servers, or network printers—connects individually to a central hub, switch, or router via point-to-point physical links. All network traffic passes through this central device, simplifying network management and troubleshooting; if an individual cable fails, only that specific connected node goes completely offline.

110. (A) P-2, Q-4, R-3, S-1
Standard file extensions identify format standards and default associated application software. The file extension .docx corresponds to Microsoft Word word processing documents; .xlsx represents Microsoft Excel spreadsheet workbooks; .pptx identifies Microsoft PowerPoint presentation slide decks; and .html denotes HyperText Markup Language web pages rendered by web browser desktop application software.

111. (D) Piracy
Software piracy refers to the illegal duplication, distribution, sharing, or commercial use of copyrighted proprietary software without authorization or appropriate software licensing from the copyright holder. It infringes intellectual property rights, inflicts substantial financial losses on software developers, and exposes unauthorized users to potential system security malware cyber security risks.

112. (A) Wireless Fidelity
Wi-Fi stands for Wireless Fidelity, representing local area wireless networking technologies based on the IEEE 802.11 standards. Wi-Fi enables devices like smartphones, laptops, and smart TVs to connect wirelessly to local networks and high-speed internet access points using radio frequency waves, avoiding the need for physical Ethernet network connection cables.

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113. (C) MS Word
MS Word is an end-user application software designed specifically for word processing and document creation. In contrast, Windows 11, Android, and macOS function as core operating systems—system software that manages computer hardware resources, memory allocation, system processes, and provides common services for executing desktop and mobile software application system programs.

114. (A) Network Layer
In the OSI (Open Systems Interconnection) reference model, Layer 3 is the Network Layer. It is responsible for logical IP addressing, packet forwarding, and routing data across multiple interconnected networks. Routers operate at this layer, determining the most efficient network path for data packets to travel from source to destination.

115. (A) I, II and III
Utility software consists of system maintenance tools designed to optimize, analyze, configure, and protect computer resources. Disk Defragmenter organizes storage sectors, while antivirus programs defend systems against malware. In contrast, MS Excel is a spreadsheet application software, not an administrative system utility, rendering statements I, II, and III completely correct.

116. (B) Physical objects embedded with sensors to exchange data
The Internet of Things (IoT) describes a global network of physical devices—including smart home appliances, industrial sensors, vehicles, and wearable devices—embedded with electronics, software, and connectivity. This enables these

connected objects to collect environmental data, communicate across networks, and exchange information autonomously with minimal direct human control or manual intervention.

117. (C) =
In spreadsheet software applications like MS Excel, every formula or calculation function must begin with an equal sign (=). The equal sign signals to the spreadsheet engine that the succeeding entry should be evaluated as a mathematical expression or function call rather than stored as plain static alphanumeric cell text.

118. (D) RTI Online
RTI Online is an official e-governance web portal developed by the Department of Personnel and Training in India. It serves as a unified single-window platform allowing citizens to file Right to Information (RTI) applications, submit first appeals, and pay processing fees online to central government ministries and public official authorities.

119. (A) Clock speed
Gigahertz (GHz) measures central processing unit clock speed, indicating the frequency of internal clock cycles per second executed by a microprocessor chip. One gigahertz represents one billion clock cycles per second, reflecting how rapidly the CPU can process instructions, execute logic commands, and perform arithmetic operations within system microarchitecture circuitry.

120. (B) SMTP
Simple Mail Transfer Protocol (SMTP) is the internet standard network protocol used specifically for transmitting and routing electronic mail messages between email servers. When a user sends an email message, SMTP transfers the message from the sender's client mail server across TCP networks to the recipient's destination host mail server.

121. (B) The selected item is copied and then pasted.
In standard graphic operating systems, pressing Ctrl + C copies selected text or items into the virtual clipboard memory without removing them from their original location. Subsequently pressing Ctrl + V executes the Paste command, duplicating and inserting the copied clipboard contents into the targeted location or active cursor position.

122. (A) Hardware
Hardware refers to the tangible, physical equipment and physical electronic components of a computer system that can be physically touched and seen. This includes internal components like the motherboard, central processing unit microchip, memory modules, and power supply, as well as external peripherals such as monitors, keyboards, mice, and printers.

123. (C) Providing IT and e-governance support to governments
Established in 1976 under the Ministry of Electronics and Information Technology, the National Informatics Centre (NIC) is India's premier science and technology institution. NIC provides IT infrastructure, software application development, network connectivity (NICNET), and technical support to central and state government administrative departments to implement e-governance digital initiatives and projects.

124. (D) Firefox
Mozilla Firefox is an open-source web browser application used to access web pages, whereas Google, Bing, and Yahoo operate search engines designed to index web content and locate online information. Web browsers act as client tools that render web pages retrieved via search engines and web server network site links.

125. (A) I and II only
The Information Age represents the societal transition from traditional industrial manufacturing toward an economy based on information technology, propelled by microcomputers and internet connectivity. Contrary to statement III, this technological revolution caused an exponential surge in global data creation, storage, and processing, making statements I and II mathematically correct.

126. (B) Virus
A computer virus is a self-replicating malicious software program designed to infect system files, corrupt data, and spread between computers by attaching itself to executable programs or document files. When infected files execute, the virus payload triggers destructive operations,

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such as destroying hard drive data or degrading system hardware performance.

127. (D) Microcomputer
Laptops and personal desktop systems fall under the microcomputer classification, powered by a single central microprocessor. Designed for personal and educational utility, microcomputers provide general-purpose processing power, portability, and user accessibility suited for academic studying, research, writing assignments, and web navigation across modern digital learning user software platforms.

128. (A) Portable Document Format
PDF stands for Portable Document Format, an open file format developed by Adobe in the 1990s. PDF files preserve document formatting, including fonts, text, vector graphics, and images, consistently across different hardware devices, operating systems, and software platforms without alteration, rendering them ideal for official electronic document digital network exchange.

129. (C) Ctrl + B
In Microsoft Word and other word processing applications, pressing the Ctrl + B keyboard shortcut applies or removes bold formatting on selected text. Applying bold weight increases font stroke thickness, emphasizing key titles, subheadings, or key terms within a formatted document layout for enhanced visual reader clarity and document presentation.

130. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
E-governance fosters operational transparency by transitioning government processes onto open digital networks. Digital public records, transaction logs, and online administrative portals are

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CHAPTER 02

History and Introduction of the Internet

1. Which of the following best defines the internet?
(A) A localized computer network within a single building
(B) A global system of interconnected computer networks using standard communication protocols
(C) A specific software application used to view web pages
(D) A private network owned by a single telecommunications company

2. What is the full form of ARPANET, which is considered the early form of the internet?
(A) American Research Program Academic Network
(B) Advanced Routing Protocol Access Network
(C) American Regional Private Area Network
(D) Advanced Research Projects Agency Network

3. Which organization is credited with developing the first operational packet-switching network that laid the foundation for the internet?
(A) United States Department of Defense
(B) Microsoft
(C) International Telecommunication Union
(D) CERN

4. In which decade was ARPANET first established?
(A) 1950s
(B) 1960s
(C) 1980s
(D) 1990s

5. Which major network replaced ARPANET and served as the backbone of the early internet in the United States?
(A) NSFNET
(B) TELENET
(C) INTRANET
(D) ETHERNET

6. When did publicly available internet service officially begin in India?
(A) 15 August 1990
(B) 15 August 1995
(C) 26 January 1996
(D) 1 January 2000

7. Which company was the first to launch internet services for the general public in India?
(A) BSNL (Bharat Sanchar Nigam Limited)
(B) VSNL (Videsh Sanchar Nigam Limited)
(C) MTNL (Mahanagar Telephone Nigam Limited)
(D) Reliance Communications

8. What is the primary purpose of a computer network?
(A) To expand the physical processing memory and internal storage of a standalone computer
(B) To serve as a centralized antivirus protection system across multiple local network computers
(C) To share resources and exchange data among devices
(D) To convert digital signals into analog signals for long-distance telephone lines

9. Which network type is most suitable for connecting computers within a single room, office, or small building?
(A) WAN
(B) MAN
(C) LAN
(D) PAN

10. Match the types of computer networks in List I with their typical coverage areas in List II.
List I: (Network Type)
P. PAN
Q. LAN
R. MAN
S. WAN
List II: (Coverage Area)
1. Across countries and continents
2. Within a single city
3. Within an office building
4. Within an individual's personal workspace
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1

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(D) P-1, Q-2, R-3, S-4

11. Which type of network would be used to connect the branch offices of a bank across different cities in India?
(A) LAN
(B) MAN
(C) WAN
(D) PAN

12. What does the abbreviation ISP stand for in the context of the internet?
(A) Internet Security Protocol
(B) Internet Service Provider
(C) Internal System Program
(D) Information Service Portal

13. Which of the following best describes the role of a client in a client-server network?
(A) It requests services or data from another computer.
(B) It provides shared resources, files, and centralized services to other networked computers.
(C) It acts as the primary hardware hub connecting all physical transmission cables across a network.
(D) It actively manages and configures security firewalls for the entire enterprise network system.

14. In internet terminology, what is a server?
(A) A certified technician responsible for installing physical internet cables and network connections
(B) A specialized software application designed exclusively to detect and block malicious computer viruses
(C) A computer providing files and services to client devices
(D) A high-speed physical transmission cable connecting two distinct enterprise computer networks

15. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): A server must have higher processing power and storage capacity than a typical client computer.
Reason (R): A server handles multiple simultaneous requests from various client computers over the network.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

16. Which of the following connection types uses standard telephone lines but does not allow making a voice call while the internet is in use?
(A) Broadband
(B) Wi-Fi
(C) Dial-up
(D) Fiber Optic

17. What is a defining characteristic of a broadband internet connection?
(A) It requires the user to dial a specific telephone number through an acoustic modem to establish a connection.
(B) It provides high-speed internet access across multiple channels.
(C) It operates strictly through wireless satellite transmissions without using any ground-based physical cables.
(D) It is strictly limited to an outdated maximum transmission speed of 56 kbps over standard phone lines.

18. Which technology is primarily used in mobile data networks that are currently providing the highest standard commercial speeds in India?
(A) 2G
(B) 3G
(C) 4G
(D) 5G

19. The term 'Wi-Fi' is generally used to describe which of the following?
(A) A wireless local area network technology
(B) A wired connection between a computer and a printer
(C) A satellite-based navigation system
(D) A type of computer virus

20. Consider the following statements regarding dial-up internet connections:
I. It is an older technology that is much slower than broadband.
II. It requires a modem to convert digital data into analog audio signals.
III. It allows high-speed video streaming without buffering.
Which of the above statements are correct?
(A) Only I and II
(B) Only II and III

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(C) Only I and III
(D) I, II and III

21. What is meant by the term 'bandwidth' in internet terminology?
(A) The maximum rate of data transfer across a network in a given time
(B) The physical measurement of the thickness or width of an ethernet network cable
(C) The total count of active user devices concurrently connected to a local network system
(D) The monthly subscription price charged by an Internet Service Provider for a connection

22. What does the abbreviation URL stand for?
(A) Universal Routing Link
(B) Unified Registration Locator
(C) Uniform Routing Language
(D) Uniform Resource Locator

23. Which device is essential for connecting a local home network to the wider internet and directing data packets to their correct destinations?
(A) Monitor
(B) Router
(C) Scanner
(D) Printer

24. What is the primary function of a modem?
(A) To store large volumes of sensitive enterprise data securely in local server hard drives
(B) To serve as an automated online search engine for retrieving web information quickly
(C) To modulate and demodulate signals for data transmission
(D) To render and print complete web pages directly from an active internet browser window

25. Consider the following statements regarding web browsers:
I. They are software applications used to access and view websites.
II. Google Chrome and Mozilla Firefox are examples of web browsers.
III. They translate HTML code into the visual format seen by the user.
IV. A web browser acts as an internet service provider.
Which of the above statements are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

26. Which of the following is NOT a web browser?
(A) Google Search
(B) Microsoft Edge
(C) Safari
(D) Opera

27. What is the primary purpose of a search engine?
(A) To establish and maintain the physical network connection to an Internet Service Provider
(B) To search the web for information using keywords
(C) To thoroughly scan a computer's local hard drive storage for malicious software and malware
(D) To design, build, and host newly registered domain websites on web servers

28. Which of the following is a major example of a search engine?
(A) Microsoft Word
(B) Bing
(C) Mozilla Firefox
(D) Adobe Reader

29. What is the fundamental difference between a website and a web page?
(A) A web page is a single document, while a website is a collection of related pages.
(B) A web page is an overarching structural collection that encompasses multiple independent websites.
(C) A website is strictly a single digital document, whereas an individual web page contains multiple hosted sites.
(D) There is no technical or practical difference; both terms are entirely synonymous in web terminology.

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30. Match the internet terminologies in List I with their functions in List II.
List I: (Terminology)
P. Web Browser
Q. Search Engine
R. ISP
S. Modem
List II: (Function)
1. Converts digital signals to analog and vice versa
2. Provides access to internet services
3. Locates information on the web using keywords

4. Displays web pages
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-3, R-1, S-2
(D) P-1, Q-2, R-3, S-4

31. Which part of the URL "https://www.example.gov.in" indicates the top-level domain?
(A) https
(B) www
(C) example
(D) .in

32. What was the full form of VSNL, the company that introduced the internet in India?
(A) Vidyut Sanchar Nigam Limited
(B) Vishwa Sanchar Nigam Limited
(C) Videsh Sanchar Nigam Limited
(D) Videsh Seva Network Limited

33. A domain name is translated into an IP address by which of the following systems?
(A) HTML (HyperText Markup Language)
(B) Domain Name System (DNS)
(C) HTTP (HyperText Transfer Protocol)
(D) FTP (File Transfer Protocol)

34. Which domain extension is generally reserved for government websites in India?
(A) .com
(B) .edu
(C) .org
(D) .gov.in

35. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): The internet is an invaluable tool for modern education.
Reason (R): It provides vast access to online courses, research materials, and remote learning platforms.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

36. E-commerce primarily refers to which of the following activities on the internet?
(A) Exchanging personal electronic mail messages and attachments between users
(B) Playing interactive multiplayer online video games with global participants
(C) Buying and selling goods or services online
(D) Downloading system software updates and operational patches from servers

37. Which of the following is an example of online banking (e-banking)?
(A) Transferring funds via a mobile banking app
(B) Withdrawing physical cash notes directly from an Automated Teller Machine
(C) Visiting a local bank branch in person to deposit a paper cheque at the counter
(D) Printing transaction details on a physical paper passbook using an automated kiosk

38. The use of digital technology and internet platforms by the government to provide services to citizens is known as what?
(A) E-commerce
(B) E-learning
(C) E-mail
(D) E-governance

39. Which of the following is a direct benefit of the internet?
(A) Complete and permanent elimination of all computer hardware maintenance costs
(B) Global connectivity and fast communication
(C) Absolute guarantee of total end-to-end user data privacy and security
(D) Operational requirement of zero electrical power or battery usage to function

40. Consider the following statements regarding the side effects and limitations of the internet:
I. It can lead to addiction and reduced physical activity.
II. It exposes users to risks like cyberbullying and identity theft.
III. It guarantees that all information available is completely accurate and factual.
Which of the above statements are correct?
(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II and III

41. The term "Digital Divide" refers to which of the following?
(A) The physical geographical separation and distance between two enterprise network web servers
(B) The logical division of a local computer hard drive storage into multiple distinct operating partitions
(C) The fundamental technical difference in data

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representation between digital binary and analog signals
(D) The gap between those with internet access and those without

42. What does the abbreviation LAN stand for?
(A) Local Area Network
(B) Logical Area Network
(C) Large Access Network
(D) Limited Area Network

43. What is the primary objective of the BharatNet project initiated by the Government of India?
(A) To distribute free smartphones and cellular data plans to all citizens across the nation
(B) To connect all Gram Panchayats with broadband
(C) To develop and establish an independent, indigenous Indian web search engine platform
(D) To promote and manufacture all computer networking hardware devices entirely domestically

44. What does the term 'upload' mean in the context of the internet?
(A) To copy and save a digital file from a remote internet server onto a local device hard drive
(B) To transfer a file from a local computer to a remote server
(C) To dynamically increase the overall data transfer speed and bandwidth of an active internet connection
(D) To download and install the latest feature updates for a device operating system

45. Consider the following statements about internet terminology:
I. Downloading means copying data from the internet to a local device.
II. A hotspot allows a device to share its internet connection with others wirelessly.
III. Uploading speed is usually identical to downloading speed in standard home broadband.
IV. Bandwidth determines the maximum data transfer rate of a network.
Which of the above statements are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

46. What is a mobile hotspot used for?
(A) To physically cool down the internal battery components of an overheating smartphone device
(B) To amplify and boost weak cellular network signal reception in remote or rural geographical areas
(C) To share cellular data with other devices via Wi-Fi
(D) To establish a direct connection to orbital satellites for high-definition television broadcasting

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47. Which current trend in internet usage involves physical objects, appliances, and sensors connecting to the internet to exchange data?
(A) Cloud Computing Infrastructure
(B) Immersive Virtual Reality
(C) Decentralized Blockchain Technology
(D) Internet of Things (IoT)

48. Cloud storage is an internet application that allows users to do what?
(A) Accurately predict localized weather patterns and atmospheric satellite data
(B) Automatically build and configure private enterprise network security domains
(C) Store data remotely on internet servers instead of local drives
(D) Completely bypass commercial internet service providers to gain unrestricted free access

49. Which of the following correctly describes a Personal Area Network (PAN)?
(A) A high-speed telecommunications network connecting computers and branch offices across multiple major cities
(B) A network centered around a person, usually within 10 meters
(C) A dedicated regional computer network spanning an entire large university campus and research facility
(D) A global interconnected network composed of thousands of corporate enterprise cloud servers

50. Match the domain extensions in List I with their typical intended use in List II.
List I: (Domain Extension)
P. .com
Q. .edu
R. .gov
S. .mil
List II: (Intended Use)

1. Educational institutions
2. Military entities
3. Commercial businesses
4. Government agencies

(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-1, R-3, S-2

51. Which of the following is NOT an essential component required to connect a home computer to the internet?
(A) A Web Camera
(B) An Internet Service Provider
(C) A Modem or Router
(D) A Web Browser

52. What does the abbreviation PAN stand for in networking?
(A) Private Access Network
(B) Public Area Network
(C) Personal Area Network
(D) Primary Access Node

53. The concept of transferring files from a web server to a user's computer for offline access is called what?
(A) Downloading
(B) Browsing
(C) Uploading
(D) Streaming

54. Which of the following best describes the World Wide Web (WWW)?
(A) The extensive network of undersea physical fibre optic cables connecting global internet servers
(B) The very first commercial web browser application created and distributed during the ARPANET era
(C) A specialized antivirus software program designed to protect personal computers against online security threats
(D) A system of hypertext documents accessible over the internet

55. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): The internet and the World Wide Web are not the same thing.
Reason (R): The internet is the underlying network of networks, while the World Wide Web is a service that runs on top of the internet.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

56. Which of the following refers to a private network contained within an enterprise that is used to securely share company information and computing resources among employees?
(A) Internet
(B) Extranet
(C) Intranet
(D) ARPANET

57. What is a 'web crawler' or 'spider' primarily used for?
(A) To rapidly spread malicious computer viruses and trojans across vulnerable local network systems
(B) To design interactive graphical user interfaces and responsive layouts for newly launched websites
(C) To establish and configure physical hardware transmission connections between core enterprise routers
(D) To browse the web and index pages for search engines

58. The first page that appears when a user opens a website is commonly referred to as the:
(A) Home page
(B) End page
(C) Contact page
(D) Search page

59. Which technology allows a user to access internet services without the use of physical cables linking their device to a router?
(A) Ethernet
(B) Wi-Fi
(C) Fiber Optic
(D) Coaxial

60. Consider the following statements about broadband internet:
I. Broadband provides high-speed internet access.
II. Broadband connections are always established using dial-up modems.
III. Fiber optic cables offer much higher bandwidth than traditional copper cables.
Which of the above statements are correct?
(A) Only I and II

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(B) Only II and III
(C) Only I and III
(D) I, II and III

61. Which of the following options represents a Metropolitan Area Network (MAN)?
(A) A network linking offices and public facilities within a municipality
(B) A short-range personal area network connecting two handheld smartphone devices using wireless Bluetooth technology
(C) A high-capacity global wide area network connecting financial trading platforms across different international capitals
(D) A localized residential network connecting a laptop computer directly to a smart television via home Wi-Fi

62. What does the abbreviation Wi-Fi commonly stand for?
(A) Wireless Fiber Technology
(B) Wired Fiber Transmission
(C) Wireless Fidelity
(D) Wide Fidelity Standard

63. The IP address acts as what for a device connected to the internet?
(A) An encrypted administrative password required to gain access to a private wireless network
(B) A physical security authentication protocol used by hardware devices
(C) A specialized desktop software program utilized for creating and designing interactive web pages
(D) A unique numerical ID for routing data

64. What is the fundamental role of protocols in computer networks?
(A) They design and manufacture the physical silicon components and networking hardware devices.
(B) They protect the computer's electronic display screen and local hardware from physical damage.
(C) They establish the communication rules between network devices.
(D) They generate and regulate continuous electrical power supply directly for the wireless router.

65. Consider the following networks:
I. Local Area Network
II. Metropolitan Area Network
III. Wide Area Network
IV. Personal Area Network
Which of the following represents these networks in decreasing order of geographical span?
(A) I, II, III, IV
(B) III, II, I, IV
(C) IV, I, II, III
(D) III, I, II, IV

66. When an individual consumes media such as music or video directly from the internet without having to save the entire file to their device first, it is known as:
(A) Downloading
(B) Uploading
(C) Phishing
(D) Streaming

67. Which of the following is considered an e-governance initiative by the Government of India?
(A) DigiLocker
(B) Amazon India
(C) Facebook
(D) Wikipedia

68. The UMANG app, related to internet applications in India, provides what kind of services?
(A) A dedicated digital gaming platform designed for downloading and playing multiplayer online games
(B) A localized location-based search engine optimized for discovering nearby commercial restaurants
(C) A unified platform for diverse government services
(D) A specialized mobile antivirus software utility designed to detect and eliminate malicious software

69. Which of the following uses a client-server architecture?
(A) Accessing a remote webpage using a web browser
(B) Opening and reading a locally saved text document using a standalone Notepad application
(C) Playing an installed single-player offline video game without any active network connection
(D) Transferring personal photo files directly through a physical USB cable from a smartphone to a PC

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70. Match the application types in List I with their correct examples in List II.
List I: (Application Type)
P. Communication
Q. E-commerce
R. Search Engine
S. Web Browser
List II: (Example)
1. Google Chrome
2. Flipkart
3. WhatsApp
4. Bing
(A) P-3, Q-2, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-4, S-1

71. The speed of data transfer in modern internet connections is typically measured in which unit?
(A) Kilograms per second
(B) Megabits per second (Mbps)
(C) Megahertz (MHz)
(D) Revolutions per minute (RPM)

72. What is the full form of WWW?
(A) Web Wide World
(B) World Web Wide
(C) World Wide Web
(D) Wide World Web

73. To connect a computer to a wired Local Area Network (LAN), which of the following hardware ports is typically used?
(A) HDMI port
(B) VGA port
(C) Audio jack
(D) Ethernet (RJ45) port

74. Which of the following is an example of an e-commerce platform?
(A) Amazon
(B) Google Chrome
(C) Linux
(D) Adobe Photoshop

75. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): Wi-Fi networks require a password if they are secured.
Reason (R): Open Wi-Fi networks encrypt data by default and are completely safe from hackers.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

76. In an internet browser, what is a 'Bookmark' used for?
(A) To automatically block intrusive third-party pop-up advertisements and promotional banners
(B) To save a website URL for quick future access
(C) To permanently clear and delete the entire local browsing history and temporary cache files
(D) To automatically initiate and download media files directly to the designated system folder

77. Which term describes the path or address of a specific resource on the internet?
(A) URL
(B) USB
(C) HTML
(D) ISP

78. Which of the following statements about broadband and dial-up connections is incorrect?
(A) Broadband technology provides significantly higher data transmission speeds compared to traditional dial-up connections.
(B) Dial-up connections completely engage the standard telephone line, preventing simultaneous voice calls.
(C) Broadband requires manually dialing a phone number to connect.
(D) Dial-up is globally recognized as an obsolete and outdated legacy method for accessing the internet.

79. When you enter a keyword in Google, the software searches its database and displays relevant websites. This list of results is technically known as:
(A) HTML document structure
(B) Website homepage layout
(C) Enterprise extranet page
(D) SERP

80. Consider the following statements regarding the BharatNet project:
I. It aims to connect all Gram Panchayats via optical fibre.
II. It is a central government initiative to bridge the digital divide in rural India.

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III. It exclusively provides internet access to metropolitan cities.

Which of the above statements are correct?

(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II and III

81. In internet routing, what happens when a data packet is sent from a source to a destination?

(A) It travels uninterrupted in a continuous physical signal form without ever breaking into separate parts.
(B) The file splits into smaller packets that travel independently and reassemble.
(C) It is copied onto a removable flash storage drive and physically transported through traditional postal mail.
(D) The entire intact data file moves exclusively through a single dedicated physical cable in one unbroken piece.

82. What does HTTP stand for in the context of website URLs?

(A) HyperText Transmission Process
(B) High Transfer Text Protocol
(C) Hyperlink Transfer Technology Protocol
(D) HyperText Transfer Protocol

83. The digital divide in a country like India is most commonly visible between which two demographics?

(A) Urban groups with high-speed internet and rural groups lacking access
(B) Consumers who exclusively use mobile smartphones versus those using personal laptop computers
(C) Desktop users who prefer web browsers like Google Chrome versus those using Mozilla Firefox
(D) Active online e-commerce shoppers versus individuals participating in online multiplayer video games

84. Which of the following best describes the function of a Domain Name System (DNS)?

(A) It provides centralized enterprise network security by actively scanning and blocking computer viruses
(B) It securely hosts high-definition video content and multimedia media libraries for online streaming
(C) It translates domain names into IP addresses like a phonebook.
(D) It manages network traffic by allocating total bandwidth equally to all connected active users

85. Consider the following advantages of the internet:

I. Quick communication via email and messaging
II. Easy access to vast educational resources
III. Secure environment where cyber crimes never happen
IV. Facilitation of online banking and commerce

Which of the above statements are correct?

(A) I, II, and III
(B) II, III, and IV
(C) I, II, and IV
(D) I, III, and IV

86. Which wireless technology is most commonly used for establishing a Personal Area Network (PAN) between a smartphone and a pair of wireless earphones?

(A) Wi-Fi
(B) WiMAX
(C) Fiber Optics
(D) Bluetooth

87. A person sets up an internet connection that receives signals from a dish pointing to the sky. Which type of connection is this?

(A) Traditional Dial-up connection
(B) Satellite Internet
(C) High-speed Fiber Optic cable
(D) Wired Ethernet LAN connection

88. Which organization coordinates the maintenance of namespaces and IP address spaces on the internet globally?

(A) UNESCO
(B) WHO
(C) ICANN
(D) BSNL

89. Which of the following is considered a negative side effect of excessive internet use?

(A) Significantly improved satellite geographical mapping systems
(B) Increased and rapid access to real-time global news coverage
(C) Convenient round-the-clock online ticket booking services
(D) Cyberbullying and harassment

90. Match the connection technologies in List I with their characteristic features in List II.

List I: (Connection Technology)

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P. Dial-up
Q. Fiber Optic
R. Mobile Data (4G/5G)
S. Wi-Fi
List II: (Characteristic Feature)
1. Uses light to transmit data at very high speeds
2. Wireless connection primarily for cellular devices on the go
3. Wireless local network using radio waves
4. Uses an acoustic modem and phone line; very slow speed

(A) P-4, Q-1, R-2, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-4, R-1, S-2

91. Which protocol is primarily used for securely sending and receiving emails over the internet?
(A) HTTP
(B) SMTP
(C) FTP
(D) IP

92. The 's' in the HTTPS protocol signifies what?
(A) System
(B) Secure
(C) Server
(D) Standard

93. A student is watching an online video lecture. The video stops playing and displays a spinning circle, waiting for more data to arrive. This issue is primarily caused by:
(A) Insufficient network bandwidth or slow speed
(B) A severe malicious software virus affecting the computer monitor hardware
(C) Having too much unused local hard drive storage capacity available on the system
(D) The physical USB keyboard becoming accidentally unplugged from the desktop tower

94. What is the fundamental requirement for a device to be identified and communicate on a TCP/IP network?
(A) A web browser
(B) A webcam
(C) An IP address
(D) An antivirus program

95. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): Fiber optic internet is generally faster and more reliable than traditional copper cable internet.
Reason (R): Fiber optic cables transmit data as pulses of light, which travel faster and are immune to electromagnetic interference.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

96. If you are reading the news on "www.timesofindia.com", the content you are viewing is considered a:
(A) Search engine
(B) Web browser
(C) Website
(D) Hardware port

97. Which network covers the largest geographical area?
(A) PAN
(B) WAN
(C) LAN
(D) MAN

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98. Which of the following software must be installed on your computer to view web pages?
(A) Microsoft Excel
(B) Operating System only
(C) Adobe Photoshop
(D) Web Browser

99. The "Incognito" or "Private" mode in a web browser is designed to do which of the following?
(A) Prevent saving your browsing history and cookies locally
(B) Hide your unique public IP address completely from your local Internet Service Provider
(C) Automatically double the maximum internet data downloading speed of your active network connection
(D) Guarantee that all files downloaded from external web servers are completely virus-free

100. Consider the following statements about search engines:
I. They use algorithms to rank web pages based on relevance.
II. Google is the only search engine available on

the internet.
III. They index content found on the World Wide Web.
Which of the above statements are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II and III

101. Which term is used to describe the buying and selling of goods via internet platforms?
(A) E-commerce
(B) E-banking
(C) E-governance
(D) E-mail

102. Which of the following is an example of an Internet Service Provider (ISP) in India?
(A) Google
(B) Microsoft
(C) Intel
(D) Jio

103. When connecting to an open Wi-Fi network at an airport or coffee shop, what is the primary risk?
(A) The rechargeable battery of the mobile device drains significantly faster due to Wi-Fi usage.
(B) Unsecured network data can be intercepted by hackers.
(C) The device will automatically and uncontrollably download all shared media files present on the network.
(D) The physical hardware circuits of the smartphone will suffer severe permanent electrical damage.

104. Which of the following technologies paved the way for modern internet usage on mobile phones?
(A) High-speed Fiber Optic cabling infrastructure
(B) Traditional Coaxial copper television cables
(C) Cellular networks
(D) Legacy Dial-up telephone modems

105. Consider the following internet applications:
I. Sending an electronic mail
II. Checking land records on a government portal
III. Ordering a book from Amazon
IV. Taking a massive open online course (MOOC)
Which of the above applications fall under e-governance and e-commerce respectively?
(A) I and II
(B) II and III
(C) III and IV
(D) I and IV

106. In the URL "http://www.example.com/index.html", what does "/index.html" represent?
(A) The file path on the server
(B) The underlying network communication protocol
(C) The registered internet domain name
(D) The default web search engine system

107. Which of the following refers to a computer that manages resources and provides services to other computers on a network?
(A) Client
(B) Server
(C) Node
(D) Terminal

108. The first network to implement the TCP/IP protocol suite, transitioning to the modern internet structure on January 1, 1983, was:
(A) ARPANET
(B) ETHERNET
(C) BLUETOOTH
(D) INTRANET

109. What is the role of a modem in establishing an internet connection over a telephone line?
(A) It converts computer digital data to analog phone signals and vice versa.
(B) It automatically restricts and blocks user access to unapproved or dangerous external web sites.
(C) It serves as a physical video display interface cable linking the desktop monitor directly to the CPU.
(D) It securely stores temporary internet browser cache and recently downloaded system files.

110. Which of the following is the correct sequence of computer networks in increasing order of their typical geographical coverage area?
(A) LAN, PAN, MAN, WAN
(B) PAN, LAN, MAN, WAN
(C) MAN, LAN, PAN, WAN
(D) PAN, MAN, LAN, WAN

111. Which of the following devices operates at the network layer and routes data packets between different computer networks?
(A) Hub
(B) Switch

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(C) Repeater
(D) Router

112. An IP address consists of how many numbers separated by periods in the IPv4 format?
(A) 2
(B) 4
(C) 6
(D) 8

113. If you want to find information about the 'History of India' on the internet, which type of software are you most likely to use first?
(A) An e-commerce site like Flipkart
(B) A search engine like Google or Bing
(C) A presentation software like MS PowerPoint
(D) A video editing tool

114. Which of the following is considered an e-learning platform?
(A) IRCTC
(B) Zomato
(C) Paytm
(D) SWAYAM

115. A government hospital setting up an online portal for patients to book appointments is an example of which internet application?
(A) E-governance
(B) E-commerce
(C) E-learning
(D) Social Networking

116. What is the main difference between 4G and 5G mobile networks?
(A) 5G requires fixed physical wired infrastructure whereas 4G operates exclusively through wireless cell towers.
(B) 5G technology is strictly restricted to industrial data and cannot be used by smartphones to browse the web.
(C) 5G offers higher speeds, lower latency, and greater device capacity.
(D) 4G technology is limited strictly to transmitting traditional voice phone calls without supporting high-speed data.

117. In terms of internet security, which of the following is a recommended best practice?
(A) Keeping system software and antivirus updated
(B) Reusing the exact same simple password across all personal and financial web accounts
(C) Frequently clicking on and opening unsolicited email attachment files from unknown senders
(D) Connecting to unsecured public coffee shop Wi-Fi networks to conduct online banking transactions

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118. Which protocol is responsible for finding the web server and fetching a webpage?
(A) FTP
(B) SMTP
(C) POP3
(D) HTTP

119. A collection of millions of interconnected documents and media residing on servers across the world is known as:
(A) A Local Area Network
(B) The World Wide Web
(C) The Operating System
(D) A Database Management System

120. Which of the following identifies the correct sequence of steps involved in accessing a web page using a domain name?
(A) User types URL → DNS resolves IP → Browser requests page → Server sends page
(B) Server sends page → DNS resolves IP → User types URL → Browser requests page
(C) Browser requests page → Server sends page → DNS resolves IP → User types URL
(D) DNS resolves IP → User types URL → Server sends page → Browser requests page

121. Tim Berners-Lee is credited with the invention of which of the following?
(A) Electronic Mail
(B) The Computer Mouse
(C) The First Microprocessor
(D) The World Wide Web

122. Which Indian government portal provides a single window access for citizens to various documents and certificates like Aadhaar and driving license in a digital format?
(A) DigiLocker
(B) CoWIN
(C) Make In India
(D) e-NAM

123. The ability to work from home by accessing office servers remotely over the internet is heavily reliant on which type of network technology?
(A) Bluetooth wireless connection
(B) VPN
(C) USB tethering protocol
(D) Infrared light transmission

124. In a school's computer lab, all computers are connected together and share a single printer. Which network type is this?
(A) LAN
(B) WAN
(C) PAN
(D) MAN

125. The process of searching for and transferring software updates from the internet to your local computer is known as:
(A) Downloading
(B) Uploading
(C) Browsing
(D) Phishing

126. Which of the following is an example of a popular internet web browser developed by Google?
(A) Safari
(B) Edge
(C) Chrome
(D) Firefox

127. An internet service that translates a domain name (like www.example.gov.in) into a machine-readable IP address is called:
(A) ISP
(B) URL
(C) HTTP
(D) DNS

128. What term describes a website that serves as a gateway to other internet resources, often providing news, email, and search capabilities on one page?
(A) Router
(B) Web Server
(C) Web Portal
(D) Hyperlink

129. The term 'broadband' is a shortened form of which phrase?
(A) Broad broadcasting
(B) Broad bandwidth
(C) Broad base network
(D) Broad browser band

130. Arrange the following stages of internet development in the correct chronological order of their introduction:
1. World Wide Web (WWW)
2. ARPANET
3. 5G Mobile Networks
4. NSFNET

Which of the following represents the correct chronological order?
(A) 2, 4, 1, 3
(B) 2, 1, 4, 3
(C) 4, 2, 1, 3
(D) 1, 2, 4, 3

131. Which of the following best defines an Intranet?
(A) A private network used internally by an organization
(B) An open, public global telecommunications network accessible by anyone anywhere in the world
(C) A dedicated cellular wireless network consisting exclusively of mobile handheld smartphone devices
(D) A widely used informal alternative term for describing the entire public World Wide Web system

132. The process of uploading an image to Instagram or Facebook primarily involves:
(A) Downloading and copying image data directly from an external remote server onto your local device storage
(B) Editing and modifying the visual parameters of an image using desktop photo editing software application
(C) Transferring data from your local device to a remote web server
(D) Permanently deleting and removing the selected image file from your smartphone device local storage

133. Which of the following is not a benefit of using the internet in the field of education?
(A) Complete elimination of the need to ever read or study
(B) Access to diverse and abundant research material
(C) Facilitation of distance learning and MOOCs
(D) Real-time collaboration between students and teachers globally

134. A local ISP provides an internet plan advertised as "100 Mbps". What does "Mbps" stand for?
(A) Megabytes per second
(B) Microbytes per second
(C) Millibits per second
(D) Megabits per second

135. The National Optical Fibre Network (NOFN) initiative, designed to provide broadband connectivity to Gram Panchayats, is now known as:

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(A) Digital India
(B) BharatNet
(C) Make in India
(D) Startup India

136. What is the fundamental difference between a web browser and a search engine?
(A) A web browser represents a physical computer hardware component, whereas an online search engine is strictly a software utility.
(B) A web browser physically connects your personal computer to the internet, while a search engine operates primarily as an antivirus scanner.
(C) A browser accesses websites; a search engine finds web information.
(D) There is absolutely no technical or functional difference between the two; both terms refer to the exact same computing application.

137. Which of the following network topologies connects all devices via a single central cable acting as a backbone?
(A) Star topology
(B) Ring topology
(C) Mesh topology
(D) Bus topology

138. The internet relies heavily on which primary suite of communication protocols?
(A) TCP/IP
(B) IPX/SPX
(C) AppleTalk
(D) NetBIOS

139. Which of the following is the odd one out in the context of internet connectivity types?
(A) Dial-up
(B) Bluetooth
(C) Broadband
(D) Mobile Data

140. E-governance applications such as applying for an income certificate online via an official state e-District portal are primarily aimed at providing which benefit?
(A) Entertaining urban and rural citizens by offering downloadable online video games
(B) Delivering government services efficiently and accessibly online
(C) Facilitating the commercial sale and auction of public government lands to private enterprise corporations
(D) Completely replacing all physical desktop computers across public offices with handheld mobile smartphones

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ANSWERS

1. (B) A global system of interconnected computer networks using standard communication protocols
The internet is a vast global system of interconnected computer networks that communicate using standardized networking protocols. It enables millions of private, public, academic, business, and government networks to exchange data seamlessly worldwide. By facilitating universal data transmission, digital communication, resource sharing, and web services, it forms the foundation of modern digital information exchange across international borders.

2. (D) Advanced Research Projects Agency Network
ARPANET stands for the Advanced Research Projects Agency Network, established as a pioneering computer network initiative. Developed under the United States Department of Defense, it introduced packet-switching technology, which allowed separate computers to communicate effectively over long distances. This foundational infrastructure successfully demonstrated the viability of decentralized data communications, directly leading to modern global internet networking technologies.

3. (A) United States Department of Defense
The United States Department of Defense created ARPANET through its Advanced Research Projects Agency in the late 1960s. This landmark project developed operational packet-switching technology, establishing robust communication channels between distinct research computers. By funding and engineering this resilient network architecture, the agency laid the technical groundwork for packet transmission principles that currently power global internet protocols.

4. (B) 1960s
ARPANET was established in the late 1960s, with its first successful interconnected message transmitted between computers in 1969. Developed by researchers funded by the United States government, this network tested revolutionary packet-switching methodologies. The foundational achievements during this decade proved that distributed computing networks could function reliably, setting the stage for future internet development.

5. (A) NSFNET
NSFNET, created by the National Science Foundation in the mid-1980s, replaced ARPANET as the primary high-speed backbone for academic and research computing networks in the United States. It significantly increased bandwidth capacities, linked supercomputing centers nationwide, and promoted broader institutional connectivity, thereby serving as a vital bridge toward the commercialization and expansion of the global internet.

6. (B) 15 August 1995
Publicly available internet services officially launched in India on 15 August 1995. Introduced by Videsh Sanchar Nigam Limited, this development transformed Indian telecommunications by enabling businesses, academic institutions, and general citizens to access global web resources. This historical milestone marked the beginning of India's rapid digital transformation, technological adoption, and modern information technology infrastructure expansion.

7. (B) VSNL (Videsh Sanchar Nigam Limited)
Videsh Sanchar Nigam Limited, a state-owned telecommunications entity at the time, became the first company to roll out commercial internet service to the Indian public in August 1995. By establishing early international gateway infrastructure and dial-up connectivity, it enabled domestic subscribers to connect to the global digital network, initiating India's digital communications era.

8. (C) To share resources and exchange data among devices
The fundamental objective of any computer network is to facilitate resource sharing and data exchange among interconnected computing devices. By establishing physical or wireless links, networks permit users to share hardware, software, stored files, and communication channels efficiently. This collaborative

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connectivity improves productivity, centralizes administrative tasks, and reduces organizational operational costs across local and enterprise environments.

9. (C) LAN
A Local Area Network is tailored specifically for connecting computing devices within a geographically restricted boundary, such as a single office room, home, or academic building. Operating over short distances allows high data transfer speeds, minimal signal latency, and straightforward network administration. It provides efficient sharing of local hardware devices, files, and central internet connections.

10. (A) P-4, Q-3, R-2, S-1
Computer networks are categorized according to their geographical coverage. Personal Area Networks link personal devices within an individual's immediate workspace. Local Area Networks cover restricted environments like office buildings. Metropolitan Area Networks extend across an entire city or town. Wide Area Networks span expansive geographic regions, connecting multiple systems across national boundaries and continents globally.

11. (C) WAN
Connecting enterprise branch offices across distant cities requires a Wide Area Network, which spans extensive geographic regions beyond local boundaries. By utilizing leased telecommunication lines, fiber optic cables, or satellite links, a Wide Area Network ensures secure, continuous data transmission, centralized database access, and synchronized business operations for geographically distributed corporate locations nationwide.

12. (B) Internet Service Provider
An Internet Service Provider is a commercial entity or telecommunication company that delivers internet access, domain registration, and network management services to individuals and organizations. Acting as an essential access gateway, it maintains the necessary physical infrastructure, routing hardware, and data lines to route subscriber traffic directly onto the broader global internet network.

13. (A) It requests services or data from another computer.
In a client-server network architecture, a client is a local computer hardware or software application that initiates network requests to retrieve specific resources, services, or data stored on a central computer. The client processes user commands, displays fetched information, and relies on central network servers to execute intensive storage, processing, and application management operations.

14. (C) A computer providing files and services to client devices
A server is a dedicated high-capacity computer or system program designed to store, manage, and process central data while delivering requested services to multiple client devices over a network. Operating continuously, servers host websites, handle database queries, manage email communication, and enforce administrative permissions to ensure seamless, organized resource distribution across connected network environments.

15. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Servers process numerous concurrent incoming requests from multiple client computers across a network, demanding high-performance central processing units, extensive random access memory, and massive redundant storage capacity. Because client machines only handle localized individual user workloads, servers inherently require far superior hardware specifications and operational reliability to prevent performance bottlenecks and maintain continuous service availability.

16. (C) Dial-up
A dial-up internet connection establishes a network link over traditional public switched telephone lines using an acoustic modem. Because it utilizes standard audio frequencies on the phone circuit exclusively for digital data conversion during an active session, users cannot make or receive regular voice telephone calls simultaneously over the same physical telephone line connection.

17. (B) It provides high-speed internet access across multiple channels.
Broadband internet access is defined by its ability to transmit high-speed digital data concurrently

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across multiple signaling channels over a single physical line. Unlike legacy narrow-band connections, broadband provides continuous, always-on connectivity with elevated bandwidth, enabling seamless multimedia streaming, rapid file downloads, real-time communication, and reliable multi-user network sharing for contemporary digital tasks.

18. (D) 5G
Fifth-generation mobile data networks represent the latest commercial cellular standard in India, offering unprecedented data transfer speeds, extremely low latency, and enhanced capacity for simultaneous device connections. Utilizing advanced radio frequencies and infrastructure, this wireless technology supports intensive applications such as high-definition streaming, industrial automation, real-time cloud computing, and advanced connected smart devices.

19. (A) A wireless local area network technology
Wi-Fi is a popular technology that enables computers, smartphones, and other digital devices to connect to a local area network wirelessly using radio frequency signals. Operating under standardized IEEE protocols, it eliminates the need for physical Ethernet cables, offering convenience and mobility within homes, offices, educational institutions, and various public gathering locations.

20. (A) Only I and II
Dial-up technology represents an early internet access mechanism that converts digital data into analog audio signals using modems over telephone lines, resulting in very slow transfer speeds. Due to strict bandwidth constraints, dial-up connections cannot support high-definition video streaming without extensive buffering, making it an obsolete option compared to modern high-speed broadband platforms.

21. (A) The maximum rate of data transfer across a network in a given time
Bandwidth defines the maximum rate of data transmission capacity offered by a network connection within a fixed time interval, typically expressed in megabits or gigabits per second. Higher bandwidth allows larger volumes of digital information to travel concurrently across the network, facilitating faster file downloads, smooth video streaming, and responsive web browsing.

22. (D) Uniform Resource Locator
Uniform Resource Locator is the formal standard reference address used to identify and locate specific documents, images, web pages, or digital resources on the World Wide Web. It specifies the underlying access protocol, domain name, and distinct file location path, enabling web browsers to retrieve and render the exact requested online resource accurately.

23. (B) Router
A router is a crucial networking hardware device responsible for forwarding data packets between distinct computer networks, such as linking a private home network to the broader internet infrastructure. It analyzes incoming packet destination addresses, determines optimal transmission paths, assigns local IP addresses, and ensures efficient, secure traffic management among all connected network devices.

24. (C) To modulate and demodulate signals for data transmission
A modem, short for modulator-demodulator, converts digital signals produced by computers into analog signals suitable for transmission over traditional communication channels like telephone or cable lines. Conversely, it demodulates incoming analog signals back into digital data that local devices can interpret, serving as a critical bridge between local networks and service providers.

25. (A) I, II, and III
Web browsers are specialized software applications engineered to retrieve, render, and display HTML-formatted documents and multimedia content from web servers. Popular programs like Google Chrome and Mozilla Firefox interpret underlying coding languages to present visual web pages to users. Browsers rely on Internet Service Providers to supply the physical network access required to reach internet servers.

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26. (A) Google Search
Google Search is an online web search engine service rather than a standalone web browser application like Microsoft Edge, Safari, or Opera. While web browsers provide the essential software interface needed to access and render

websites, search engines index web content and utilize algorithms to locate relevant information matching user search queries.

27. (B) To search the web for information using keywords
A search engine is an online software tool designed to explore the World Wide Web systematically and retrieve web documents relevant to user-entered search terms. By indexing billions of web pages and utilizing sophisticated algorithms, search engines rank and organize digital content, allowing users to discover informative websites, media, and online resources quickly.

28. (B) Bing
Bing is a major web search engine developed by Microsoft that indexes global web content to deliver organized search results based on user queries. Unlike word processors, web browsers, or document viewers, a search engine continuously crawls web servers, processes text keyphrases, and presents ranked lists of relevant online documents and digital resources.

29. (A) A web page is a single document, while a website is a collection of related pages.
A web page is an individual digital document hosted on the internet that contains formatted text, images, and embedded hyperlinks. Conversely, a website is a organized collection of interconnected web pages hosted under a common domain name. A website acts as a complete destination, whereas individual web pages serve as its constituent structural elements.

30. (A) P-4, Q-3, R-2, S-1
Network components and applications perform distinct tasks in digital communication systems. Web browsers display visual web pages, while search engines utilize keywords to locate online information. Internet Service Providers deliver essential network connectivity to subscribers, and modems modulate and demodulate digital and analog signals to enable data transmission over telecommunication lines.

31. (D) .in
In a uniform resource locator, the final portion of the domain name suffix represents the top-level domain. In the address provided, the country-code suffix designates India's top-level domain designation, indicating geographic origin and registry authorization. It operates under standard internet hierarchy rules to categorize and organize global web address structures effectively.

32. (C) Videsh Sanchar Nigam Limited
Videsh Sanchar Nigam Limited was the state-owned Indian telecommunications corporation responsible for introducing public internet access in India in 1995. The organization played a historic role in developing international telecommunication infrastructure, managing submarine cable connections, and providing early commercial internet service subscriptions across major urban centers throughout the nation.

33. (B) Domain Name System (DNS)
The Domain Name System functions as an essential distributed database that translates human-readable web domain names into machine-readable numerical IP addresses. Because computers communicate across networks using numeric addresses, this translation system allows users to enter memorable alphabetical names while enabling routers to direct internet traffic accurately to the correct web server locations.

34. (D) .gov.in
The domain extension designated as .gov.in is specifically reserved for official websites operated by government entities, ministries, and administrative departments in India. Managed under strict regulatory authority, this domain structure assures citizens that the online portal is authentic, secure, and officially affiliated with central or state government institutions across the nation.

35. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
The internet has transformed modern educational paradigms by democratizing access to global knowledge bases, virtual libraries, research databases, and remote learning platforms. Students and educators utilize these interconnected technologies to attend online courses, collaborate internationally, and access updated educational materials, making global connectivity an indispensable driver of academic advancement and lifelong learning.

36. (C) Buying and selling goods or services online
Electronic commerce, commonly known as e-commerce, encompasses the electronic buying, selling, and trading of physical products, digital

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goods, or services over the internet. Utilizing online storefronts, secure payment gateways, and automated inventory systems, e-commerce allows consumers and commercial businesses to conduct financial transactions seamlessly without requiring physical presence in traditional brick-and-mortar stores.

37. (A) Transferring funds via a mobile banking app
Online banking involves conducting financial operations electronically over the internet via secure banking portals or dedicated mobile applications. Utilizing a smartphone application to execute direct electronic funds transfers between accounts represents a prime example of e-banking, eliminating the need to physically visit bank premises or utilize physical currency notes for everyday financial transactions.

38. (D) E-governance
E-governance refers to the strategic deployment of digital technologies, web portals, and mobile applications by governmental bodies to deliver public services, administrative information, and civic resources directly to citizens. This digital approach improves operational transparency, enhances administrative efficiency, reduces bureaucratic delays, and simplifies citizen interactions with various public sector departments online.

39. (B) Global connectivity and fast communication
The primary benefit of the internet is its ability to offer instantaneous global connectivity and rapid data communication across vast geographical distances. By linking personal, commercial, and governmental networks, it enables real-time messaging, video calls, collaborative working, and seamless digital resource sharing, effectively overcoming global spatial barriers for personal and professional interactions.

40. (A) Only I and II
Excessive internet usage can induce negative psychological side effects, including technology addiction, social isolation, and sedentary lifestyles leading to reduced physical activity. Additionally, online connectivity exposes users to significant cyber security threats like harassment, identity theft, and online scams. Furthermore, unverified digital content means available internet information is not guaranteed to be factual.

41. (D) The gap between those with internet access and those without
The term digital divide describes the economic, social, and demographic inequality between individuals or communities who possess reliable access to modern information technology, such as high-speed internet, and those who lack it. Bridging this gap is crucial for ensuring equal educational opportunities, economic participation, administrative access, and digital literacy development nationwide.

42. (A) Local Area Network
LAN stands for Local Area Network, which represents a interconnected computer network confined to a limited geographic region such as an office room, home, school building, or laboratory. Local Area Networks facilitate high data transfer speeds, minimal operational signal delays, reliable security controls, and efficient local device and resource sharing.

43. (B) To connect all Gram Panchayats with broadband
The primary objective of the BharatNet initiative undertaken by the Government of India is to establish high-speed optical fiber network infrastructure connecting all Gram Panchayats nationwide. By extending broadband connectivity to rural and remote regions, the project seeks to facilitate e-governance, enhance digital literacy, boost rural entrepreneurship, and bridge the digital divide across India.

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44. (B) To transfer a file from a local computer to a remote server
In internet networking terminology, uploading refers specifically to the technical process of transmitting digital files, media, or data from a local computing device to a remote server or destination over a network connection. Common examples include sending email attachments, posting photo media on social platforms, or saving documents to remote cloud storage.

45. (B) I, II, and IV
Downloading involves transferring remote data onto local storage, while mobile hotspots share internet connectivity wirelessly with nearby devices. Furthermore, bandwidth specifies maximum network data transfer capacity. However, residential broadband connections are typically asymmetric, meaning upload speeds are intentionally lower than download speeds

to optimize consumer web browsing and media streaming performance.

46. (C) To share cellular data with other devices via Wi-Fi
A mobile hotspot feature allows a smartphone or portable cellular device to share its cellular data internet connection with other nearby electronic devices over Wi-Fi. By converting cellular signals into a temporary wireless local network, it enables laptops, tablets, and other devices to access internet services seamlessly while moving or traveling away from fixed broadband infrastructure.

47. (D) Internet of Things (IoT)
The Internet of Things describes a modern technological paradigm where physical objects, home appliances, industrial machines, wearable devices, and environmental sensors are embedded with electronic circuitry, software, and connectivity. This enables these connected devices to collect, transmit, and exchange operational data over the internet automatically, facilitating intelligent automation and remote physical monitoring.

48. (C) Store data remotely on internet servers instead of local drives
Cloud storage is an internet-based service that permits users to save, manage, and access digital files remotely on secure internet servers operated by hosting providers. Instead of relying solely on local hard drives or physical flash storage, users can retrieve their stored documents, photographs, and media from any location using internet-connected computing devices.

49. (B) A network centered around a person, usually within 10 meters
A Personal Area Network is an individualized computer network organized around a single person within a very short operational distance, typically extending up to 10 meters. Utilizing short-range wireless technologies like Bluetooth, a Personal Area Network seamlessly interconnects personal electronic devices such as smartphones, smartwatches, wireless headphones, and tablet computers.

50. (A) P-3, Q-1, R-4, S-2
Domain extensions serve to categorize websites according to their organizational type and administrative purpose. Commercial businesses systematically utilize .com, educational institutions adopt .edu, official government administrative bodies employ .gov, and military organizations use .mil extensions. These standard naming structures help users identify the official status and operational domain of hosted web portals.

51. (A) A Web Camera
Connecting a desktop or laptop computer to the internet strictly requires a physical modem or wireless router, an active subscription with an Internet Service Provider, and a web browser or network protocol software. Web cameras are optional peripheral hardware components used for video capturing and are not required to establish basic network connectivity.

52. (C) Personal Area Network
PAN stands for Personal Area Network, which refers to a localized wireless or wired network centered around an individual user within a very small space. Designed for short-range communication among personal devices like mobile phones, wireless audio equipment, and tablets, Personal Area Networks rely on short-range protocols such as Bluetooth or Ultra-Wideband.

53. (A) Downloading
Downloading is the process of requesting and transferring digital files, software programs, or web content from a remote server over a network to a local device for storage and offline usage. It permits users to save documents, audio tracks, and videos on local drives, allowing access without requiring continuous active internet connections.

54. (D) A system of hypertext documents accessible over the internet
The World Wide Web is an expansive global information system consisting of interlinked hypertext documents, images, and multimedia files accessible via the internet using HTTP and HTTPS protocols. It operates on top of physical internet infrastructure, allowing users to navigate between related web pages effortlessly by clicking embedded hyperlinks within web browsers.

55. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
The internet represents the underlying global physical hardware network composed of routers,

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switches, servers, and cables that connects computing devices worldwide. Conversely, the World Wide Web is an information-sharing service operating on top of this physical infrastructure, utilizing standardized protocols and web browsers to access, display, and navigate interconnected hypertext web documents.

56. (C) Intranet
An Intranet is a private, restricted computer network built using internet protocols and architecture, operated exclusively within an organization or enterprise. It restricts external access to ensure company sensitive data, internal communication tools, operational policies, and shared computing resources remain securely accessible only to authorized employees and internal business operations.

57. (D) To browse the web and index pages for search engines
A web crawler, often referred to as a spider, is an automated software script employed by search engines to browse the World Wide Web continuously and systematically. It visits web pages, analyzes hyperlinked structures, extracts textual content, and sends data back to index databases, enabling search engines to evaluate and rank relevant web results.

58. (A) Home page
The home page is the primary, initial web page presented when a user accesses a website domain address in a browser. It functions as the main structural starting point and directory, displaying navigation menus, foundational information, and key hyperlinks that guide visitors to explore various inner pages and specialized sections within the website.

59. (B) Wi-Fi
Wi-Fi technology allows computing devices to connect to local area networks and access high-speed internet wirelessly using radio frequency waves. By substituting physical Ethernet copper cables with wireless access points, Wi-Fi provides operational flexibility, device mobility, and convenient multi-user network sharing across residential homes, commercial offices, and diverse public venue spaces.

60. (C) Only I and III
Broadband offers high-speed, continuous internet access over multiple transmission channels, utilizing modern technologies such as fiber optic cables, which deliver vastly superior bandwidth compared to copper lines. Conversely, legacy dial-up modems represent obsolete narrow-band technology, making the assertion that broadband relies on dial-up connections completely false in modern telecommunications networking.

61. (A) A network linking offices and public facilities within a municipality
A Metropolitan Area Network is designed to cover a intermediate geographical span, typically linking multiple local networks across a city, municipality, or large corporate campus. It provides high-speed data transmission capabilities to connect various public administrative facilities, educational campuses, and corporate branch offices dispersed throughout a designated metropolitan urban zone.

62. (C) Wireless Fidelity
Wi-Fi is a widely used commercial term that stands for Wireless Fidelity, representing a family of wireless network communication protocols based on the IEEE 802.11 standards. It enables local computing hardware and mobile devices to transmit data wirelessly over high-frequency radio waves without requiring physical cable links between devices and access routers.

63. (D) A unique numerical ID for routing data
An IP address, or Internet Protocol address, serves as a unique numerical identifier assigned to every device connected to a computer network that uses IP communication protocols. It facilitates accurate data packet routing, host identification, and logical location addressing, ensuring information packets sent across local or global networks reach their proper destinations.

64. (C) They establish the communication rules between network devices.
Network protocols are standardized sets of rules, formats, and procedures that define how data is transmitted, received, compressed, and processed across interconnected computing devices. By establishing universal guidelines for establishing connections, error detection, packet addressing, and data synchronization, protocols ensure smooth, reliable communication between diverse software platforms and hardware components nationwide.

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65. (B) III, II, I, IV
When arranged in decreasing order of geographical span, Wide Area Networks cover the largest global regions, followed by Metropolitan Area Networks spanning entire cities. Local Area Networks cover restricted spaces like office buildings, while Personal Area Networks cover the smallest range around an individual user. This order accurately reflects network classification by coverage size.

66. (D) Streaming
Streaming is the real-time transmission of digital audio or video content over the internet, allowing users to play media continuously while data transfers. Unlike downloading, streaming does not require saving complete media files onto local storage devices before playback begins, reducing local storage consumption while requiring a stable, high-speed internet network connection.

67. (A) DigiLocker
DigiLocker is an important flagship e-governance platform introduced by the Government of India under the Digital India initiative. It provides Indian citizens with a secure digital document wallet to store, access, and share authentic government-issued certificates, educational transcripts, and identity documents electronically, reducing reliance on physical paper documents across administrative services.

68. (C) A unified platform for diverse government services
The UMANG application, standing for Unified Mobile Application for New-age Governance, is a centralized Indian government mobile platform. Developed to streamline e-governance access, it allows citizens to access a vast array of central, state, and regional public services, utility payment systems, and administrative schemes through a single, secure digital application interface on smartphones.

69. (A) Accessing a remote webpage using a web browser
Accessing a remote webpage via a web browser is a classic example of client-server architecture. The user's web browser operates as the client application initiating HTTP requests, while the remote web server processes these requests, retrieves stored file assets, and returns the requested webpage data over the internet network back to the client device.

70. (A) P-3, Q-2, R-4, S-1
Digital applications fulfill specific operational roles across network systems. WhatsApp serves as a real-time messaging communication platform, Flipkart operates as an e-commerce online marketplace, Bing functions as a web search engine locating information across web servers, and Google Chrome acts as a web browser interface used to render and display interactive websites.

71. (B) Megabits per second (Mbps)
Data transmission speeds in modern computer networks and high-speed broadband connections are standardly measured in Megabits per second, abbreviated as Mbps. This metric quantifies the total volume of digital data bits successfully transferred across a network link each second, indicating overall connection speed, capacity, and data handling performance for online activities.

72. (C) World Wide Web
WWW stands for World Wide Web, which is a global system of interconnected hypertext documents, web pages, and digital media hosted on web servers worldwide. Users access this linked network of information using web browsers and standardized protocols such as HTTP, enabling effortless document retrieval and navigation across the broader internet ecosystem.

73. (D) Ethernet (RJ45) port
An Ethernet port, standardly utilizing an RJ45 connector interface, is the physical hardware interface used to connect a computer directly to a wired Local Area Network. This interface allows reliable, high-speed data transmission over twisted-pair copper network cables, establishing stable network connections with local network switches, modems, and routers.

74. (A) Amazon
Amazon is a prominent global e-commerce platform that facilitates online retail transactions, enabling consumers and commercial vendors to buy and sell products, services, and digital subscriptions over the internet. It utilizes secure web databases, digital shopping carts, and electronic payment processing systems to conduct electronic commercial operations efficiently across global markets.

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75. (C) Assertion (A) is true but Reason (R) is false.
Secured Wi-Fi networks mandate authentication passwords and apply encryption standards to safeguard wireless data transmissions from unauthorized access. Conversely, open Wi-Fi networks in public spaces do not encrypt wireless data by default, making transmitted unencrypted information vulnerable to interception by malicious actors, which disproves the claim that public open networks are inherently safe.

76. (B) To save a website URL for quick future access
A bookmark in a web browser software application functions as a stored shortcut that saves a specific web page address URL for quick future access. By creating bookmarks, users can easily re-visit preferred websites directly without needing to remember complex web addresses or perform repetitive web searches through search engines every time.

77. (A) URL
A Uniform Resource Locator serves as the precise address and path system used to locate distinct digital documents, web pages, media files, and interactive resources on the internet. It specifies the necessary communication protocol, the targeted domain host name, and the exact directory path needed for web browsers to retrieve content correctly.

78. (C) Broadband requires manually dialing a phone number to connect.
Broadband internet connections are always-on high-speed services that do not require manually dialing telephone numbers to establish connectivity. Modern broadband platforms utilize continuous digital signaling over fiber optic cables, high-speed cable modems, or digital subscriber lines, allowing continuous network access without interrupting traditional landline voice phone services or requiring manual setup operations.

79. (D) SERP
SERP stands for Search Engine Results Page, which represents the organized listing of web links, descriptions, and relevant document snippets generated by a search engine in response to a user's keyword query. Ranking algorithmically according to relevance, search engine result pages help users discover appropriate websites matching their information requirements.

80. (A) Only I and II
The BharatNet project is a major national initiative managed by the Indian government to bridge the rural-urban digital divide. By installing high-speed optical fiber cable infrastructure across rural regions, the initiative aims to connect all Gram Panchayats with reliable broadband, bringing essential digital services, e-governance, and e-learning platforms to rural communities nationwide.

81. (B) The file splits into smaller packets that travel independently and reassemble.
In internet packet-switching networks, large data files are broken down into smaller, individual units known as data packets before transmission. Each packet contains destination address headers and travels independently across variable network pathways. Upon reaching the target destination device, the packets are reassembled in correct sequential order to reconstruct the original complete file.

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82. (D) HyperText Transfer Protocol
HTTP stands for HyperText Transfer Protocol, which serves as the foundational communication protocol utilized across the World Wide Web. It establishes standardized rules for formatting, requesting, and transmitting web pages and multimedia documents from server databases to client web browsers, enabling seamless rendering and interaction with online web resources.

83. (A) Urban groups with high-speed internet and rural groups lacking access
In developing nations like India, the digital divide is most visibly reflected in the stark disparity between urban communities with access to high-speed broadband, cellular data networks, and advanced technology, and rural populations lacking basic digital infrastructure, reliable connectivity, and digital literacy. Bridging this urban-rural divide remains a major socio-economic priority.

84. (C) It translates domain names into IP addresses like a phonebook.
The Domain Name System acts like an online directory by translating human-friendly domain names into machine-readable IP addresses used by networking hardware. Because users easily remember alphabetical names while routers require numerical addresses to direct internet traffic, the Domain Name System performs

automated IP translation queries to locate target web servers seamlessly.

85. (C) I, II, and IV
The internet provides immense advantages, including instant global communication via email and messaging platforms, seamless access to extensive educational resources, and convenient online banking and e-commerce services. However, because cyber security threats and cyber crimes actively persist across global networks, claiming that the internet guarantees an environment completely free of crime is factually false.

86. (D) Bluetooth
Bluetooth is a short-range wireless communication technology operating on radio frequencies, ideal for creating a Personal Area Network between personal electronic devices. It provides low-power, secure data transfer within a range of approximately ten meters, making it the standard technology for connecting smartphones to wireless earphones, smartwatches, and peripheral accessories.

87. (B) Satellite Internet
Satellite internet technology delivers network connectivity by transmitting and receiving radio frequency signals directly between a ground-installed dish antenna and geostationary or low-Earth orbit telecommunication satellites. This wireless technology provides essential high-speed internet coverage to remote, rural, or maritime regions where installing physical fiber optic cables or cellular towers is unfeasible.

88. (C) ICANN
The Internet Corporation for Assigned Names and Numbers is an international non-profit organization responsible for coordinating the global domain name system, IP address allocation, and protocol parameter registries. By managing these critical internet resources centrally, it ensures stable, secure, and unified operational functionality for global network addresses and communications across all participating nations.

89. (D) Cyberbullying and harassment
While the internet provides extensive societal and educational benefits, excessive and unmonitored online usage presents significant negative consequences, including cyberbullying, online harassment, privacy invasion, and digital addiction. These harmful social behaviors disproportionately impact vulnerable online demographics, highlighting the critical importance of digital safety, cyber law awareness, and balanced technology habits.

90. (A) P-4, Q-1, R-2, S-3
Internet connection technologies feature distinct physical traits and operational capabilities. Legacy dial-up utilizes acoustic modems over traditional telephone lines at very low transmission speeds. Advanced fiber optic networks transmit data pulses via light inside glass strands at extreme speeds. Mobile cellular networks supply wireless connectivity on mobile devices, and Wi-Fi creates local wireless networks using radio frequency signals.

91. (B) SMTP
Simple Mail Transfer Protocol is the standard internet protocol designed specifically for transmitting and routing outgoing electronic mail messages across TCP/IP networks. It handles communication between mail servers, ensuring email messages are correctly directed from the sender's mail client to the recipient's target mail server for subsequent retrieval by electronic mail software.

92. (B) Secure
The letter 's' located at the end of the HTTPS protocol abbreviation stands for 'Secure'. It indicates that the connection between the client web browser and the destination web server is encrypted using Secure Sockets Layer or Transport Layer Security protocols, protecting sensitive user data, passwords, and transaction details from unauthorized network interception.

93. (A) Insufficient network bandwidth or slow speed
Video buffering and frequent playback delays during online media streaming occur primarily due to limited network bandwidth or reduced connection speed. When incoming data transfer rates fall below the playback bit rate of the video file, the application pauses playback to fill its buffer memory, ensuring smooth continuation once sufficient data packets arrive.

94. (C) An IP address
For any electronic device to identify itself, route data packets, and communicate across a TCP/IP network, it must be assigned a unique IP address. This numerical identifier functions

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as a logical network address, enabling routers and switches to direct incoming and outgoing information traffic accurately to and from the specific connected device.

95. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Fiber optic internet offers superior speed and signal reliability compared to traditional copper cable networks because it converts digital data into pulses of light transmitted through glass strands. Light signals travel at extremely high speeds over long distances without experiencing signal degradation or electromagnetic interference, justifying the performance advantage of fiber optic technology.

96. (C) Website
A domain address such as "www.timesofindia.com" represents a complete website, which is a structured collection of related web pages, news articles, multimedia documents, and digital assets hosted under a common domain name on web servers. Viewers navigate through these interlinked web documents using web browsers to access current news and digital media content online.

97. (B) WAN
A Wide Area Network encompasses the largest geographical span among all network classifications, capable of extending across regions, nations, and entire continents globally. By linking smaller networks together through optical fiber cables, satellite links, and leased lines, Wide Area Networks provide global connectivity, forming the structural backbone of international enterprise operations and the public internet.

98. (D) Web Browser
To view and navigate web pages residing on web servers, a computing device must have a web browser application installed. Web browsers are specialized software tools designed to request web documents, interpret HTML code and scripting languages, and render visual web interfaces, text, images, and embedded interactive elements cleanly for end users.

99. (A) Prevent saving your browsing history and cookies locally
Incognito or private browsing mode in a web browser is designed to prevent the local device from saving temporary browsing history, search records, input form details, and site cookies after the session closes. However, it does not hide network traffic from internet service providers, grant device anonymity, or guarantee protection against malicious downloads.

100. (B) Only I and III
Search engines utilize complex mathematical algorithms to crawl, index, and systematically rank web pages residing on the World Wide Web based on content relevance and authority. However, Google is not the sole existing search engine, as multiple alternative search engines such as Bing, Yahoo, and DuckDuckGo actively operate across the global internet ecosystem.

101. (A) E-commerce
E-commerce, short for electronic commerce, refers to the commercial buying and selling of goods, products, and services using internet platforms and web applications. It streamlines online shopping, digital payment processing, customer service, and order logistics, allowing consumers and commercial enterprises to conduct business transactions securely across local, national, and global markets electronically.

102. (D) Jio
Jio is a leading telecommunications company in India that functions as a major commercial Internet Service Provider. It supplies physical infrastructure, mobile wireless networks, optical fiber connections, and data subscriptions to consumers and enterprise entities, granting subscribers direct access to the global internet network and digital telecommunication services across the country.

103. (B) Unsecured network data can be intercepted by hackers.
Connecting to open, unencrypted Wi-Fi networks in public spaces exposes users to severe cyber security risks, as network traffic can be intercepted by cybercriminals on the same network. Without encryption protection, sensitive personal data, account login credentials, financial passwords, and private communications transmitted over the network can be monitored and harvested by unauthorized actors.

104. (C) Cellular networks
Cellular networks paved the way for widespread modern internet access on mobile devices by

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continuously advancing wireless data transmission standards from early 2G technologies to high-speed 4G and 5G networks. Cellular base stations and wireless mobile infrastructure allow handheld devices to connect to internet service gateways without requiring physical tethering cables or static wired connections.

105. (B) II and III
Checking land records on an official state government portal represents an administrative service delivered via e-governance technology. Conversely, ordering a commercial book from an online vendor like Amazon involves a digital commercial transaction falling under e-commerce. Therefore, these two online activities serve as direct practical examples of e-governance and e-commerce applications respectively.

106. (A) The file path on the server
In a uniform resource locator structure, the string portion appearing after the domain extension represents the specific file path on the destination web server. This file path directs the hosting server's directory system to locate, fetch, and deliver the exact requested document or HTML file back to the requesting client browser application accurately.

107. (B) Server
A server is a high-capacity computer or centralized network program designed to manage computational resources, store application files, process remote data requests, and provide various services to client computers connected across a network. It acts as a central hosting repository, facilitating controlled data sharing, web application execution, and enterprise resource management in client-server architectures.

108. (A) ARPANET
ARPANET became the foundational network to adopt the standardized TCP/IP communication protocol suite on January 1, 1983. This historical protocol migration established a unified, interoperable networking standard for interconnecting disparate computer networks, marking the official technical birth of the modern global internet architecture used worldwide today across digital communications.

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109. (A) It converts computer digital data to analog phone signals and vice versa.
A modem plays a fundamental hardware role in establishing internet connections over traditional telephone lines by performing signal conversion. It modulates digital computer data into analog audio signals suitable for transmission over copper phone circuits, and demodulates incoming analog signals back into digital data, allowing local computing devices to communicate over telecommunication networks.

110. (B) PAN, LAN, MAN, WAN
When organized in increasing order of geographical coverage area, Personal Area Networks span the smallest range around an individual, followed by Local Area Networks covering restricted buildings. Metropolitan Area Networks extend further to cover entire urban municipalities, while Wide Area Networks cover the largest physical regions across nations and continents globally.

111. (D) Router
A router is a networking hardware device operating at the network layer of the OSI model, responsible for directing data packets between different computer networks. By examining packet IP headers and referencing dynamic routing tables, the router selects optimal transmission paths, ensuring data packets travel accurately across interconnected local and wide area networks.

112. (B) 4
In the standard IPv4 addressing scheme, an IP address consists of four numerical values ranging from 0 to 255, separated by periods in dotted-decimal notation. This 32-bit logical addressing format uniquely identifies individual host devices and network interfaces, facilitating precise packet routing and communication across TCP/IP network systems globally.

113. (B) A search engine like Google or Bing
To discover online information regarding a specific topic like historical events, a user utilizes a web search engine such as Google or Bing. Search engines systematically search vast web databases using relevant search keywords and present ranked listings of informational web pages, reference documents, and digital articles for user exploration.

114. (D) SWAYAM
SWAYAM is an indigenous e-learning platform initiated by the Government of India, designed to offer online educational courses, lectures, and academic certifications to students across the nation. It provides open access to high-quality educational resources created by top academic institutions, supporting distance learning, continuous skill development, and digital education inclusion nationwide.

115. (A) E-governance
When a public government hospital establishes an online web portal permitting citizens to schedule medical appointments electronically, it represents an e-governance application. This digital initiative utilizes internet technology to streamline administrative public health services, enhance service accessibility, reduce physical queue congestion at medical facilities, and improve operational transparency for public citizens.

116. (C) 5G offers higher speeds, lower latency, and greater device capacity.
Fifth-generation mobile networks represent a major technological upgrade over fourth-generation systems, delivering significantly higher data transmission speeds, dramatically lower signal latency, and vastly superior device capacity per cell site. These advanced capabilities enable real-time cloud operations, smooth high-definition video streaming, large-scale Internet of Things deployments, and ultra-reliable industrial automation.

117. (A) Keeping system software and antivirus updated
A essential best practice for maintaining robust digital cybersecurity involves routinely updating computer operating systems, application software, and installed antivirus programs. Regular security updates install vital patch fixes that eliminate system vulnerabilities, protecting connected devices and personal data against emerging cyber security threats, malicious software infections, and unauthorized hacker intrusions.

118. (D) HTTP
HyperText Transfer Protocol is the primary application-layer communication protocol used by web browsers to locate target web servers and fetch requested web pages over the internet. It establishes standard client-server request and response mechanisms, enabling browsers to retrieve HTML text files, images, and embedded web media assets reliably for visual rendering.

119. (B) The World Wide Web
The World Wide Web is an expansive, global system of interlinked hypertext documents, digital media, and web applications hosted on web servers connected via the internet. Users seamlessly search, access, and navigate these global digital resources using web browsers and standardized protocols, forming the primary information-sharing platform across modern society.

120. (A) User types URL → DNS resolves IP → Browser requests page → Server sends page
When accessing a website via its domain name, the process begins when a user enters the URL into a web browser. Next, the Domain Name System resolves the domain into a numerical IP address. The browser then sends a page request to the target server, which processes it and sends the web page data back.

121. (D) The World Wide Web
Tim Berners-Lee is internationally recognized for inventing the World Wide Web in 1989 while working at CERN. He developed the fundamental technologies that power the web, including HyperText Markup Language, HyperText Transfer Protocol, and Uniform Resource Locators, creating the world's first web browser and web server to enable global information sharing.

122. (A) DigiLocker
DigiLocker is an official Indian government digital wallet portal introduced under the Digital India initiative to facilitate paperless governance. It enables citizens to store, access, and share authentic digital copies of government-issued documents, such as Aadhaar cards, driving licenses, and academic marksheets, directly from original issuing authorities in a verified electronic format.

123. (B) VPN
A Virtual Private Network, or VPN, creates an encrypted, secure connection tunnel over the public internet, enabling remote workers to access private corporate network servers securely from home. By encrypting transmitted data

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traffic and concealing user IP addresses, virtual private networks protect sensitive business communications and maintain enterprise security across remote work environments.

124. (A) LAN
A school computer laboratory connecting multiple computers and shared hardware peripherals like printers within a single room or building constitutes a Local Area Network. This localized network configuration permits high-speed data transfer, efficient local file sharing, low network latency, and centralized peripheral device management across all connected student and instructor workstation computers.

125. (A) Downloading
Downloading refers to the process of retrieving digital software updates, system patches, or media files from a remote web server across the internet and saving them onto a local computer drive. This operation permits local devices to install functional improvements, repair system security vulnerabilities, and access digital files locally while working offline.

126. (C) Chrome
Google Chrome is a widely used modern web browser developed by Google that enables users to access, view, and navigate web pages across the World Wide Web. It interprets web languages like HTML and JavaScript, rendering visual web interfaces and facilitating user interactions with online applications, search engines, and web services globally.

127. (D) DNS
The Domain Name System is a critical internet service that translates human-readable web domain names into machine-readable IP addresses required by networking hardware. Because human users memorize alphabetical website names easily while network routers require numerical IP addresses to route data packets correctly, the Domain Name System automatically resolves these addresses behind the scenes.

128. (C) Web Portal
A web portal is a specially designed website that acts as a centralized access gateway to a diverse range of internet resources, digital services, news feeds, electronic mail, and search functions. By aggregating disparate online tools and information onto a unified web page interface, web portals simplify user navigation across complex digital domains.

129. (B) Broad bandwidth
The term broadband is a shortened compound phrase derived from "broad bandwidth", referring to high-capacity telecommunications technology that transmits data simultaneously across multiple frequency channels. This wide band capacity allows continuous, high-speed data transmission, supporting intensive digital activities such as real-time multimedia streaming, fast file downloads, and multi-device local network connections.

130. (A) 2, 4, 1, 3
The chronological evolution of internet infrastructure began with ARPANET in the late 1960s, followed by NSFNET expanding university backbone connections in the 1980s. Tim Berners-Lee invented the World Wide Web in 1989 for web document sharing, while high-speed 5G mobile networks represent a much recent 21st-century advancement in cellular communications technology.

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131. (A) A private network used internally by an organization
An Intranet is a secure, private computer network restricted to an individual organization or enterprise, engineered using standard internet communication protocols. It enables employees to share internal corporate documents, collaborate on internal projects, access administrative databases, and utilize internal operational tools securely without exposing sensitive company information to the public external internet.

132. (C) Transferring data from your local device to a remote web server
Uploading an image or digital document to social media platforms involves transmitting data files from a user's local computing device across a network connection to a remote web server. Once the server receives and stores the uploaded media, the content becomes accessible online to authorized account connections or public web viewers.

133. (A) Complete elimination of the need to ever read or study
While the internet provides substantial educational benefits, such as remote learning,

access to research materials, and global academic collaboration, it does not eliminate the fundamental human requirement to study and read. Relying on digital connectivity still requires active learning, critical thinking, and disciplined reading to acquire knowledge and develop intellectual comprehension.

134. (D) Megabits per second
In internet connection specifications, the abbreviation Mbps stands for Megabits per second, which is a standardized unit measuring data transfer speed across a computer network. It quantifies the rate at which millions of digital data bits travel through the network connection each second, indicating overall bandwidth speed and download transmission capacity.

135. (B) BharatNet
The National Optical Fibre Network project, originally launched to establish optical fiber broadband infrastructure across all Gram Panchayats in India, was subsequently rebranded as BharatNet. This major national initiative serves as the digital backbone under the Digital India program, bringing high-speed internet access, e-governance services, and digital opportunities to rural communities nationwide.

136. (C) A browser accesses websites; a search engine finds web information.
A web browser is a local software application installed on a computer to display and interact with web pages, whereas a search engine is an online service designed to find web content across the internet using search keywords. Users run browsers to open websites, while utilizing search engines within browsers to discover relevant online information.

137. (D) Bus topology
Bus topology is a fundamental network architecture where every device connects to a single continuous central cable that serves as a shared transmission backbone. Data signals travel along this primary bus line in both directions, allowing connected computers to communicate. However, a failure in the main backbone cable disrupts the entire network signal transmission.

138. (A) TCP/IP
The internet relies fundamentally on the TCP/IP protocol suite, standing for Transmission Control Protocol and Internet Protocol. Transmission Control Protocol manages reliable data packet fragmentation and error-checked reassembly, while Internet Protocol governs logical addressing and packet routing across global networks, forming the core operational foundation of all modern digital network communications.

139. (B) Bluetooth
Dial-up, broadband, and mobile cellular data represent primary connection technologies engineered specifically to connect devices to the global internet. In contrast, Bluetooth is a short-range wireless protocol designed strictly for personal area networking between local electronic devices, making it distinct from traditional internet access methods used for global network connectivity.

140. (B) Delivering government services efficiently and accessibly online
State e-District government portals represent key e-governance initiatives aimed at delivering public services electronically to citizens. By enabling online applications for official certificates, public welfare schemes, and administrative permits, these web platforms make government services highly efficient, accessible, and transparent while reducing bureaucratic delays and physical visits to government offices.

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CHAPTER 03

History of the World Wide Web (WWW)

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1. Which of the following best defines the World Wide Web (WWW)?
(A) A physical network of computers connected globally through underground cables
(B) An information system where documents and other web resources are identified by URLs and accessible over the internet
(C) A system software used to operate computer hardware components
(D) An exclusive government network used for secure communications

2. Identify the fundamental difference between the internet and the World Wide Web.
(A) The internet is software, whereas the WWW is purely hardware
(B) The internet was created in 1989, whereas the WWW was created in 1969
(C) There is no difference; both terms refer to exactly the same concept
(D) The internet is a global network of networks, whereas the WWW is a collection of information accessed via the internet

3. Who is widely credited with inventing the World Wide Web?
(A) Tim Berners-Lee
(B) Vint Cerf
(C) Bill Gates
(D) Charles Babbage

4. In which year was the concept of the World Wide Web first proposed by its inventor?
(A) 1979
(B) 1989
(C) 1999
(D) 2004

5. What does the abbreviation HTML stand for in the context of web development?
(A) Hyper Text Markup Language
(B) High Tech Machine Language
(C) Hyper Transfer Metadata Link
(D) Hosted Text Management Logic

6. Consider the following statements regarding the World Wide Web and the internet:
I. The WWW is the only service available on the internet.
II. The internet provides the infrastructure for the WWW to function.
III. Email and FTP are internet services distinct from the WWW.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

7. At which research institute was the World Wide Web invented?
(A) MIT (Massachusetts Institute of Technology)
(B) CERN (European Organization for Nuclear Research)
(C) NASA (National Aeronautics and Space Administration)
(D) DARPA (Defense Advanced Research Projects Agency)

8. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): A web browser is essential to access the World Wide Web.
Reason (R): A web browser translates HTML documents into a readable visual format for the user.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

9. What is a single electronic document accessible on the World Wide Web typically called?
(A) Web site
(B) Web server
(C) Web portal
(D) Web page

10. What was the name of the first web browser developed by Tim Berners-Lee?
(A) WorldWideWeb
(B) Internet Explorer
(C) Mosaic
(D) Netscape Navigator

11. What does the abbreviation HTTP stand for in web communication?
(A) Host Transfer Terminal Protocol
(B) Hyper Text Transfer Protocol
(C) Hyperlink Translation and Transmission Protocol
(D) High Traffic Transmission Process

12. What does the 'S' in HTTPS signify?
(A) System
(B) Secure
(C) Server
(D) Standard

13. Which of the following is the primary purpose of HTML?
(A) To structure and format content on a web page
(B) To provide physical connection to the internet
(C) To act as a search engine database
(D) To scan files for computer viruses

14. Match List I with List II regarding internet terms and their definitions.
List I: (Terms)
P. HTML
Q. HTTP
R. URL
S. Browser
List II: (Definitions)
1. Protocol for transferring web pages
2. Software application to view web pages
3. Language used to structure web pages
4. Web address of a specific resource
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-4, R-1, S-2

15. What is the function of a hyperlink on a web page?
(A) It permanently deletes the page from local history
(B) It temporarily increases the user's network speed
(C) It automatically encrypts the entered password
(D) It links a web page to another web resource

16. Which network port is traditionally used by default for unencrypted HTTP traffic?
(A) Port 21
(B) Port 25
(C) Port 80
(D) Port 443

17. Consider the following statements about HTTP and HTTPS:
I. HTTPS uses encryption to protect data in transit.
II. HTTP transfers data in plain text.
III. Banks and financial websites generally use HTTP instead of HTTPS.
IV. HTTPS typically utilizes port 443.
Which of the statements given above is/are incorrect?
(A) I and II only
(B) III only
(C) II and IV only
(D) I, III and IV only

18. In standard web browsers, what is the default color of a newly created, unvisited text hyperlink?
(A) Red
(B) Green
(C) Purple
(D) Blue

19. The term "Hypertext", which forms the conceptual basis of the World Wide Web, was originally coined by whom?
(A) Ted Nelson
(B) Alan Turing
(C) Steve Wozniak
(D) Larry Page

20. Which cryptographic protocols are typically used to provide the security in HTTPS?
(A) FTP and SFTP
(B) TCP and UDP
(C) SSL and TLS
(D) POP3 and IMAP

21. The main or introductory page of a website is formally known as what?
(A) Homepage
(B) Index portal
(C) Bookmark page
(D) Server root

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22. A related collection of web pages hosted under a single domain name is called what?
(A) A web browser
(B) A search engine
(C) A web directory
(D) A website

23. Which of the following represents the correct sequence of events when a user attempts to open a website?
(A) Browser requests IP from DNS → User types URL → Server sends web page → Browser displays page
(B) User types URL → Browser requests IP from DNS → Browser connects to Server → Server sends web page
(C) Server sends web page → Browser requests IP from DNS → User types URL → Browser connects to Server
(D) User types URL → Server sends web page → Browser connects to Server → Browser requests IP from DNS

24. Which of the following is a widely used modern web browser?
(A) Microsoft Word
(B) Windows Defender
(C) Google Chrome
(D) Adobe Acrobat

25. Which of the following is NOT an example of a web browser?
(A) Mozilla Firefox
(B) Apple Safari
(C) Microsoft Edge
(D) Google Search

26. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): A website must be hosted on a web server for the general public to access it at any time.
Reason (R): A web server is a computer system that constantly stores, processes, and delivers web pages to users upon request.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

27. Which of the following is often credited as the first widely popular graphical web browser that helped popularize the World Wide Web?
(A) Opera
(B) Mosaic
(C) Safari
(D) Chrome

28. Which of the following browsers is developed by the Mozilla Foundation and is known for being open-source?
(A) Internet Explorer
(B) Firefox
(C) Safari
(D) Edge

29. Identify the incorrect statement regarding the structure of a website.
(A) Every page on a website must have exactly the same URL.
(B) A website can contain text, images, videos, and hyperlinks.
(C) Web pages within a website are usually linked together.
(D) A website requires a web hosting service to be accessible globally.

30. What is the primary function of the address bar in a web browser?
(A) To display system notifications, current time, and active date
(B) To download mandatory system software and antivirus updates
(C) To enter the URL or search query for a web page
(D) To compose, format, and send email messages to contacts

31. What is the main function of a web server?
(A) To design dynamic web layouts and formats automatically
(B) To translate foreign language content displayed on web pages
(C) To protect computer systems against critical hardware failures
(D) To store web files and serve them to client browsers

32. What does the abbreviation URL stand for?
(A) Universal Resource Locator
(B) Unified Routing Logic
(C) Uniform Resource Locator
(D) Universal Routing Link

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33. In the URL "https://www.example.gov.in/index.html", which part represents the protocol?
(A) www.example.gov.in
(B) https
(C) index.html
(D) .gov.in

34. Match List I with List II for the components of the URL "http://www.example.com/folder/page.html".
List I: (Components)
P. http://
Q. www.example.com
R. /folder/
S. page.html
List II: (Terms)
1. Specific file name
2. Domain name
3. Directory or path
4. Protocol or scheme
(A) P-4, Q-2, R-3, S-1
(B) P-2, Q-4, R-1, S-3
(C) P-4, Q-3, R-2, S-1
(D) P-1, Q-2, R-3, S-4

35. Which system translates human-readable domain names (like www.google.com) into IP addresses that computers use to connect?
(A) Domain Name System (DNS)
(B) Hypertext Transfer Protocol (HTTP)
(C) Transmission Control Protocol (TCP)
(D) Simple Mail Transfer Protocol (SMTP)

36. Consider the following statements regarding web servers:
I. Web servers run special software, such as Apache or IIS, to handle user requests.
II. Web servers use HTTP or HTTPS to communicate with client browsers.
III. Web servers are strictly used for viewing offline PDF files.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

37. Which top-level domain (TLD) extension is strictly reserved for use by government entities in India?
(A) .gov.in
(B) .com
(C) .edu
(D) .org.in

38. Which of the following is a widely used open-source web server software?
(A) Microsoft Excel Spreadsheet
(B) Mozilla Firefox Web Browser
(C) Adobe Photoshop Graphics
(D) Apache HTTP Server

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39. Find the odd one out among the following domain extensions.
(A) .com
(B) .exe
(C) .net
(D) .org

40. In a standard URL structure, what always appears first, before the colon and slashes (://)?
(A) The specific file extension name
(B) The primary registered domain name
(C) The protocol name
(D) The high-level top-level domain

41. Which of the following phrases best describes the "Web 1.0" generation of the World Wide Web?
(A) The interactive, social web
(B) The decentralized, semantic web
(C) The artificial intelligence-driven web
(D) The read-only, static web

42. Which key characteristic distinguishes Web 2.0 from Web 1.0?
(A) Support for user-generated content and interaction
(B) The official worldwide introduction of markup languages like HTML
(C) The widespread commercial invention of the dial-up modem
(D) The complete structural removal of client-side web browsers

43. Which of the following features is most closely associated with the introductory concept of Web 3.0?
(A) The universal reliance on static brochure-like websites
(B) Decentralization and blockchain technology
(C) The hardware introduction of modern color monitors
(D) The public commercial launch of the first email service

44. Consider the following statements about web generations:
I. Web 1.0 mainly consisted of static pages

where users were just consumers of information.
II. Web 2.0 introduced platforms like blogs, wikis, and social networking sites.
III. Web 3.0 aims to make machines understand the context and meaning of web data.
IV. Web 1.0 was characterized by advanced artificial intelligence algorithms.
Which of the statements given above is/are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II, III, and IV only
(D) I, II, III, and IV

45. Which of the following is the best example of a Web 2.0 application?
(A) A social media platform like Facebook or Twitter
(B) A simple personal text page from 1995 that cannot be commented on
(C) A printed encyclopaedia
(D) A standalone desktop calculator program

46. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Web 3.0 is often referred to as the Semantic Web.
Reason (R): In Web 3.0, data is linked in a way that allows machines to read and understand the relationships between concepts, making searches more intelligent.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

47. The term "Web 2.0", marking a turning point in how the internet was used, was popularized by which individual in 2004?
(A) Tim Berners-Lee
(B) Larry Page
(C) Mark Zuckerberg
(D) Tim O'Reilly

48. What type of coding language was primarily used to build the static pages of Web 1.0?
(A) Advanced server-side Python development frameworks
(B) Complex artificial neural networks and machine algorithms
(C) Basic HTML code
(D) Decentralized blockchain smart contract protocols

49. The concept of the "Semantic Web" implies that web content is structured so that:
(A) It can strictly only be read and processed by authorized human users
(B) Software agents can interpret data meanings
(C) It becomes completely invisible to all automated search engine crawlers
(D) It operates locally and requires no active internet connection to function

50. Identify the correct chronological order of the World Wide Web generations.
(A) Semantic Web → Static Web → Social Web
(B) Social Web → Semantic Web → Static Web
(C) Static Web → Social Web → Semantic Web
(D) Static Web → Semantic Web → Social Web

51. What does the abbreviation SEO stand for in the context of web management?
(A) Search Engine Optimization
(B) Secure Electronic Operation
(C) Site Extension Option
(D) System Error Output

52. What is the primary objective of Search Engine Optimization (SEO)?
(A) To prevent unauthorized external hackers from accessing a private website
(B) To automatically compress heavy video files published on a web page
(C) To increase a website's rank in search results
(D) To automatically block unwanted pop-up advertisements on browsers

53. How is a "web portal" best defined in contrast to a standard website?
(A) It aggregates diverse information and tools into a single gateway
(B) It is a specialized physical network hardware component that functions as a router
(C) It is a basic text-only website that completely excludes images and multimedia
(D) It is a printed offline directory used for looking up local physical addresses

54. Match List I with List II regarding Indian digital initiatives.
List I: (Initiatives)
P. DigiLocker
Q. UMANG
R. SWAYAM

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S. e-Hospital

List II: (Functions)

1. Online registration system for medical appointments
2. Secure cloud-based platform for storing official documents
3. Unified mobile application for various government services
4. Integrated platform offering online educational courses

(A) P-2, Q-3, R-4, S-1
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

55. Which of the following features is more characteristic of a web portal rather than a regular informational website?
(A) It is strictly hosted on a single, isolated physical web server machine
(B) It offers user logins for personalized dashboard services
(C) It displays standard web content such as plain text and inline images
(D) It is accessible through a unique and dedicated network URL address

56. Which of the following is the official National Portal of India, acting as a single window access to government services?
(A) www.bharat.com
(B) www.indian-news.org
(C) www.india.gov.in
(D) www.pm-services.in

57. The UMANG portal and app launched by the Government of India primarily facilitates:
(A) Playing online multiplayer recreational video games for citizens nationwide
(B) Booking commercial international flight tickets through private agencies
(C) Downloading copyrighted movies and media files from digital platforms
(D) Unified access to diverse pan-India e-Governance services

58. Consider the following statements regarding techniques used in Search Engine Optimization (SEO) for improving a webpage's rank ethically (White Hat SEO):
I. Using relevant keywords naturally in titles and content.
II. Creating high-quality content that users find useful.
III. Hiding keywords by making the text color the same as the background color.

Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

59. Which digital platform allows Indian citizens to access authentic digital documents like driving licenses and marksheets directly from issuers?
(A) e-RaktKosh
(B) DigiLocker
(C) BHIM
(D) IRCTC

60. In the context of keyword search in SEO, what is a "keyword"?
(A) A secret encryption password required to unlock restricted premium web content
(B) A term typed into a search engine to find information
(C) A physical security hardware token used to complete two-factor authentication
(D) The master administrative security code that reboots a remote web server

61. The buying and selling of goods and services over the World Wide Web is known as:
(A) e-Commerce
(B) e-Governance
(C) e-Learning
(D) e-Banking

62. Which of the following is a classic example of a B2C (Business-to-Consumer) e-commerce website?
(A) Wikipedia
(B) National Portal of India
(C) Amazon
(D) DigiLocker

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63. What does the abbreviation MOOC stand for in the context of online web education?
(A) Modern Offline Orientation Class
(B) Multimedia Organized Online Curriculum
(C) Multiple Option Online Certification
(D) Massive Open Online Course

64. The application of the WWW to deliver educational courses, training, and study materials over the internet is referred to as:
(A) e-Shopping
(B) e-Ticketing

(C) e-Learning
(D) e-Tendering

65. Which of the following is a major initiative by the Government of India to provide free online educational courses to citizens?
(A) UIDAI
(B) SWAYAM
(C) e-Taal
(D) BHIM

66. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): E-commerce websites require robust security measures like HTTPS and encryption.
Reason (R): E-commerce transactions involve the transfer of sensitive personal and financial data such as credit card numbers.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

67. Wikipedia is best categorized as which type of web application?
(A) An online collaborative encyclopedia
(B) A commercial online shopping mall for retail products
(C) An official government portal for collecting annual taxes
(D) A digital video streaming service for movies and shows

68. Online banking, which allows customers to conduct financial transactions via bank websites, is a major subset of which WWW application?
(A) Interactive e-Learning systems
(B) Public Social Networking platforms
(C) e-Commerce / e-Finance
(D) Digital e-Governance initiatives

69. Consider the following statements regarding the major applications of the World Wide Web:
I. E-commerce enables businesses to operate 24/7.
II. E-learning platforms often utilize video lectures and online quizzes.
III. E-governance aims to make government services more transparent and accessible to citizens.
IV. Web portals only offer links to external sites and never host their own content.
Which of the statements given above is/are correct?
(A) I, II and IV only
(B) II, III and IV only
(C) I, II and III only
(D) I, III and IV only

70. Arrange the following typical steps of an e-commerce transaction in the correct chronological order:
I. Selecting the payment method and completing payment
II. Adding desired items to the shopping cart
III. Receiving an order confirmation email
IV. Browsing the website for products
(A) IV, II, I, III
(B) II, IV, I, III
(C) IV, I, II, III
(D) I, IV, II, III

71. In web browsing, what is a "cookie"?
(A) A destructive type of computer virus designed to permanently delete user files
(B) A text file storing user preferences and session data
(C) An intrusive online advertisement banner that cannot be easily closed by users
(D) A specialized physical hardware component installed inside a remote web server

72. What is the primary purpose of a web browser's "cache"?
(A) To permanently delete all stored local browsing history and saved cookies
(B) To automatically translate foreign language websites into different dialects
(C) To store temporary web files for faster page reloading
(D) To automatically block access to known malicious and phishing websites

73. Which of the following highlights the main difference between a browser cookie and a browser cache?
(A) Cookies store graphics and website images, while cache stores plain text data only
(B) Cookies require an active user payment subscription, while cache is completely free
(C) There is no functional difference between them; they are two alternate names for identical files
(D) Cookies track session data, while cache

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speeds up loading

74. Which feature in modern web browsers allows users to browse without saving history, cookies, or form data to their local device?
(A) Private Browsing mode
(B) Operating System Safe Mode
(C) Browser Developer Tools panel
(D) Immersive Reader view mode

75. Match List I with List II regarding web security terms.
List I: (Terms)
P. Phishing
Q. Malware
R. Firewall
S. Antivirus
List II: (Definitions)
1. Software designed to detect and remove malicious code
2. Malicious software designed to harm or exploit systems
3. Deceptive emails or sites designed to steal user credentials
4. A network security system that monitors incoming and outgoing traffic
(A) P-3, Q-2, R-4, S-1
(B) P-2, Q-3, R-1, S-4
(C) P-4, Q-1, R-3, S-2
(D) P-3, Q-4, R-2, S-1

76. The fraudulent practice of sending emails purporting to be from reputable companies to induce individuals to reveal personal information is known as:
(A) Spoofing
(B) Phishing
(C) Pharming
(D) Hacking

77. Consider the following statements about browser cookies:
I. They can be used to keep a user logged into a website.
II. They can track user behavior across different sites for targeted advertising.
III. They are executable programs that can install malware.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

78. Cookies that are created by domains other than the one the user is visiting directly (often used for tracking and ads) are called:
(A) First-party cookies
(B) Session cookies
(C) Third-party cookies
(D) Flash cookies

79. Why is a user sometimes advised to "clear cache and cookies" when experiencing issues with a web page?
(A) It automatically increases the physical RAM capacity of the personal computer
(B) It installs the latest updated version of the web browser software automatically
(C) It prevents the desktop computer system from turning off or shutting down unexpectedly
(D) It forces the browser to download fresh web page files

80. What does the abbreviation SSL stand for in web security?
(A) Secure System Link
(B) Safe Server Language
(C) Secure Sockets Layer
(D) Standard Security Logic

81. In most modern web browsers on a Windows PC, which shortcut key combination is used to open a new tab?
(A) Ctrl + N
(B) Ctrl + T
(C) Ctrl + W
(D) Ctrl + H

82. Which keyboard shortcut is commonly used to close the currently active tab in a web browser?
(A) Ctrl + C
(B) Ctrl + S
(C) Ctrl + P
(D) Ctrl + W

83. In browsers like Google Chrome, the combined address bar and search bar is often referred to as the:
(A) Omnibox
(B) Searchbox
(C) Taskbar
(D) Menu bar

84. Which of the following is a standard Boolean operator used to narrow down search engine results by ensuring both terms are present?
(A) OR
(B) BUT

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(C) AND
(D) IF

85. If you place a search query in double quotation marks (e.g., "World Wide Web") in a search engine, what does it instruct the search engine to do?
(A) Search for the exact phrase match
(B) Restrict query results exclusively to digital image files
(C) Completely exclude specified terms from search engine results
(D) Filter query results to display pages published within 24 hours

86. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Using specific keywords instead of long sentences improves search engine results.
Reason (R): Search engines match keywords against indexed web pages, and unnecessary words can confuse the algorithm and return irrelevant results.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

87. What is the primary purpose of the "Bookmark" or "Favorites" feature in a web browser?
(A) To download and store a complete copy of the webpage offline
(B) To save a URL for easy access later
(C) To instantly share the current webpage on social media platforms
(D) To submit a report flagging the webpage as suspicious or malicious

88. Which shortcut key is commonly used to bookmark the current page in web browsers on Windows?
(A) Ctrl + B
(B) Ctrl + M
(C) Ctrl + D
(D) Ctrl + S

89. If a user accidentally closes a tab, they can usually find the link to the recently closed page by checking the browser's:
(A) Downloads section
(B) Settings menu
(C) Extensions manager
(D) History tab

90. Google, Bing, and Yahoo! are well-known examples of what?
(A) Search engines
(B) Web browsers
(C) Operating systems
(D) Antivirus software

91. What is the fundamental difference between webmail (like Gmail in a browser) and an email client (like Microsoft Outlook desktop app)?
(A) Webmail requires continuous internet access to send emails, whereas desktop email clients do not
(B) Webmail uses a browser, while an email client is installed locally
(C) Webmail interfaces strictly allow text messaging, whereas desktop email clients support file attachments
(D) Webmail services are designed for personal use and cannot legally be used for official communications

92. Which of the following is a popular web-based email service?
(A) Mozilla Firefox
(B) Gmail
(C) Google Chrome
(D) Adobe Acrobat

93. What does the abbreviation CC stand for in an email interface?
(A) Carbon Copy
(B) Correct Copy
(C) Computer Code
(D) Continuous Communication

94. In web email services, what is the primary use of the BCC (Blind Carbon Copy) field?
(A) To visually highlight and prioritize the primary recipients specified in the message header
(B) To permanently disable the automatic reply and reply-all functions for all message recipients
(C) To copy a recipient while hiding their email address
(D) To securely compress and attach oversized digital media files directly to the outgoing message

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95. Where do webmail services usually filter incoming emails that are suspected to be unsolicited junk or malicious?
(A) Outbox folder
(B) Saved drafts
(C) Archive folder
(D) Spam folder

96. Consider the following statements regarding web-based email features:
I. The 'Drafts' folder stores emails that are composed but not yet sent.
II. The 'Trash' or 'Bin' folder holds deleted emails temporarily.
III. The 'Subject' line should ideally give a brief summary of the email's content.
IV. An email can only be sent to one recipient at a time.
Which of the statements given above is/are correct?
(A) I, II and III only
(B) I, III and IV only
(C) II, III and IV only
(D) I, II, III and IV

97. In most standard free webmail services (like Gmail), what is the typical maximum size limit for a file attachment sent directly via email?
(A) 5 MB
(B) 25 MB
(C) 1 GB
(D) 10 GB

98. If a user loses internet connection while typing an email in a web browser, where is the unfinished email usually saved automatically?
(A) Inbox
(B) Outbox
(C) Sent Items
(D) Drafts

99. What does the abbreviation IMAP stand for in the context of email protocols?
(A) Internet Message Access Protocol
(B) Internal Mail Authorization Process
(C) Instant Messaging and Post
(D) Intranet Mail Access Program

100. In the context of the World Wide Web, the term "Bandwidth" generally refers to:
(A) The physical thickness and diameter of an ethernet cable
(B) The total number of distinct websites a single server can host
(C) The maximum rate of network data transfer
(D) The diagonal screen dimension of a browsing computer display

101. In WWW terminology, what is a "web crawler" or "spider"?
(A) A program that indexes web pages for search engines
(B) A malicious computer virus designed to corrupt and delete website files
(C) A cybercriminal who steals financial information and credit card details
(D) A specialized software application used for drawing interactive web graphics

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102. The service that provides the physical storage space and technologies for a website to be viewed on the internet is called:
(A) Web browsing
(B) Web indexing
(C) Web designing
(D) Web hosting

103. The primary function of a domain name registrar is to:
(A) Design the layout of a website
(B) Manage the reservation of internet domain names
(C) Provide high-speed internet connections to homes
(D) Remove computer viruses

104. Which common network utility command is used to test the reachability of a web server and measure the time it takes for messages to be sent and received?
(A) IPCONFIG
(B) CHKDSK
(C) PING
(D) FORMAT

105. What does the abbreviation ISP stand for in the context of internet and web access?
(A) Intranet System Protocol
(B) Internal Search Program
(C) Information Security Policy
(D) Internet Service Provider

106. Google Drive, Microsoft OneDrive, and Dropbox are popular examples of web-accessible:
(A) Cloud storage tools
(B) Internet web browsers
(C) Antivirus security software
(D) Desktop operating systems

107. What is the purpose of a CAPTCHA test commonly found on web forms?
(A) To accurately test and verify the current user internet speed
(B) To distinguish human users from automated bots
(C) To automatically translate foreign webpage text into English
(D) To compress and optimize the file size of user uploads

108. Match List I with List II regarding World Wide Web terms.
List I: (Terms)
P. Download
Q. Upload
R. Refresh
S. Bookmark
List II: (Functions)
1. To reload the current web page
2. To transfer a file from a web server to a local computer
3. To save a web page location for future reference
4. To transfer a file from a local computer to a web server
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-3, S-1
(C) P-1, Q-3, R-2, S-4
(D) P-2, Q-1, R-4, S-3

109. Every device connected to the internet and participating in the World Wide Web must have a unique numerical label assigned to it, known as an:
(A) IP address
(B) MAC address
(C) IMEI number
(D) URL code

110. Which of the following is an internal, private network that uses WWW standards but is accessible only to an organization's staff?
(A) Internet
(B) Extranet
(C) Intranet
(D) Arpanet

111. The "Digital India" initiative relies heavily on the World Wide Web infrastructure primarily to:
(A) Expand domestic hardware manufacturing across industrial factories
(B) Construct modern physical transportation roads and highway bridges
(C) Completely replace all physical paper currency with physical gold
(D) Deliver public services electronically to citizens

112. The term "Broadband" in modern digital internet refers to:
(A) A thick physical ethernet networking cable used in local connections
(B) A specialized type of internet web browser used for viewing media
(C) High-speed, always-on internet connectivity
(D) A computer monitor manufactured with an ultra-wide display aspect ratio

113. In the digital age, IoT stands for "Internet of Things". How does it relate to the WWW?
(A) It represents a modern next-generation web browser application
(B) It connects everyday physical devices to the web
(C) It completely replaces standard internet cables with a satellite network
(D) It is a regulatory national government tax levied on commercial web servers

114. The delivery of government services and information to the public using the internet and World Wide Web is formally termed:
(A) Electronic commerce
(B) Digital medicine
(C) Electronic learning
(D) e-Governance

115. Consider the following statements regarding the benefits of e-Governance through web portals:
I. It increases transparency in government processes.
II. It reduces the need for citizens to physically visit government offices.
III. It completely eliminates the need for any offline government staff.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

116. Telemedicine, an emerging application in the digital age, relies on the World Wide Web primarily for:
(A) Marketing and selling online educational courses to certified doctors

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(B) Manufacturing advanced medical equipment utilizing 3D printing tools
(C) Remote medical diagnosis and consultations
(D) Transporting and supplying physical prescription medicines via automated drones

117. What role do social media platforms (like X/ Twitter, Facebook) play in today's WWW?
(A) They host real-time news, social communication, and marketing
(B) They function as the central technical replacement for the Domain Name System
(C) They act as the primary regulatory organizations governing global internet speed
(D) They generate and issue unique numerical IP addresses to newly manufactured computers

118. Which of the following is considered a major challenge or negative aspect introduced by the widespread use of the World Wide Web and social media?
(A) Significant increase in worldwide global digital connectivity
(B) Accelerated instant access to diverse online educational resources
(C) Widespread creation of new employment jobs in the digital sector
(D) Spread of fake news and misinformation

119. What does the abbreviation W3C stand for?
(A) Web 3 Computing
(B) World Wide Web Consortium
(C) World Wide Web Corporation
(D) Web Connection Control Center

120. Which of the following represents the correct historical sequence of the development of these web-related milestones?
(A) Creation of ARPANET → Invention of WWW → Launch of Web 2.0
(B) Invention of WWW → Launch of Web 2.0 → Creation of ARPANET
(C) Launch of Web 2.0 → Creation of ARPANET → Invention of WWW
(D) Creation of ARPANET → Launch of Web 2.0 → Invention of WWW

121. When a user tries to access a web page that has been deleted or does not exist, which HTTP status error code is most commonly displayed by the server?
(A) 200 OK
(B) 404 Not Found
(C) 500 Internal Server Error
(D) 301 Moved Permanently

122. If a website's server experiences an unexpected condition that prevents it from fulfilling the request, which HTTP status code is generated?
(A) 403 Forbidden Access Error
(B) 404 Resource Not Found Error
(C) 500 Internal Error
(D) 202 Request Accepted Status

123. Which function key is the universal shortcut in Windows-based web browsers to reload or refresh the current web page?
(A) F1
(B) F2
(C) F5
(D) F12

124. The process of copying a file from the user's computer to a remote web server is known as:
(A) Downloading
(B) Uploading
(C) Rendering
(D) Indexing

125. What is the standard file extension used for saving basic static web pages?
(A) .html or .htm
(B) .doc or .docx
(C) .xls or .xlsx
(D) .exe or .bat

126. While HTTP is used to view web pages, which protocol is specifically designed for the bulk transfer of computer files between a client and server on a network?
(A) SMTP
(B) UDP
(C) FTP
(D) IMAP

127. What is the function of a "pop-up blocker" in a web browser?
(A) It permanently prevents end users from shutting down or restarting the desktop computer
(B) It locks hardware drivers and blocks the user from typing on the physical keyboard
(C) It selectively prevents remote websites from loading layout elements completely
(D) It blocks unauthorized advertising windows or tabs

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128. In the context of computer networks and web browsing, what is a "firewall"?
(A) A physical structural wall built around server rooms to prevent fire damage
(B) A system application utility specifically used to burn raw data files onto CDs
(C) A system monitoring network traffic based on rules
(D) A specialized privacy web browser designed exclusively for accessing the dark web

129. Identify the correct statement about hyperlinks on a web page.
(A) Hyperlinks can only link to other websites, never to pages within the same website.
(B) Hyperlinks can link to text, images, email addresses, and downloadable files.
(C) Hyperlinks are strictly visible as blue underlined text.
(D) A web page can contain a maximum of 10 hyperlinks.

130. The web browser "Safari" is primarily developed and maintained by which technology company?
(A) Google
(B) Microsoft
(C) Mozilla
(D) Apple

131. The web browser "Edge" is developed by which technology company?
(A) Microsoft
(B) Google LLC
(C) Meta Platforms
(D) Amazon Inc.

132. What is the default web browser provided with the Microsoft Windows 10 and Windows 11 operating systems?
(A) Internet Explorer
(B) Google Chrome
(C) Microsoft Edge
(D) Safari

133. A software program that runs on a web server and is accessed by the user through a web browser rather than being installed locally is known as a:
(A) Web application
(B) Operating system software
(C) Physical device driver software
(D) Embedded hardware firmware

134. In web design, what does the term "responsive design" mean?
(A) The website layout responds strictly to spoken audio and user voice commands only
(B) The website security system responds instantly to mitigate automated hacking attempts
(C) The underlying hosting server hardware components upgrade their capacity automatically
(D) The layout adjusts automatically across different devices

135. Consider the following statements about safe web browsing:
I. You should avoid entering passwords on websites that use HTTP instead of HTTPS.
II. You should regularly update your web browser to the latest version to patch security flaws.
III. Clicking on suspicious email links is safe as long as you use an incognito window.
IV. Using the same password for all web accounts increases security.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I, II and IV only
(D) I, II, III and IV

136. A service that creates a private, encrypted connection over a public network to improve browsing privacy and security is known as a:
(A) Local Area Network (LAN)
(B) Uniform Resource Locator (URL)
(C) Virtual Private Network (VPN)
(D) Domain Name System (DNS)

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137. Parts of the World Wide Web whose contents are not indexed by standard web search engines and require specific software, configurations, or authorization to access are commonly referred to as:
(A) The indexed Surface Web
(B) The public Clear Web
(C) The traditional Static Web
(D) The Deep Web

138. The practice of protecting web applications, networks, and digital data from malicious attacks and unauthorized access is fundamentally defined as:
(A) Cyber security
(B) Data mining
(C) SEO
(D) Cloud computing

139. The term "web accessibility" generally refers to:
(A) The maximum concurrent number of active users a server can handle simultaneously
(B) Designing websites for usability by people with disabilities
(C) The standard monthly subscription cost charged for an active internet connection
(D) The physical geographical locations and routes where internet cables are laid underground

140. In the modern digital age, which category of web-based tools has most significantly enabled the rise of remote work and virtual meetings?
(A) Retail e-commerce market portals and online shopping platforms
(B) Video conferencing and virtual collaboration tools
(C) Digital media and entertainment video streaming services
(D) Web domain hosting registrars and DNS provider services

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ANSWERS

1. (B) An information system where documents and other web resources are identified by URLs and accessible over the internet
The World Wide Web functions as an information service operating on top of the global internet network infrastructure. It organizes interlinked documents, multimedia assets, and interactive resources using Uniform Resource Locators. Users access these distributed files through web browsers that retrieve content via standard network communication protocols across connected electronic devices worldwide.

2. (D) The internet is a global network of networks, whereas the WWW is a collection of information accessed via the internet
The internet represents the global physical and logical network infrastructure consisting of interconnected computers, routers, and cables. Conversely, the World Wide Web is an application service operating on top of this physical network. It organizes information into linked hypertext documents accessible through client software using specialized web protocols.

3. (A) Tim Berners-Lee
Tim Berners-Lee created the World Wide Web while working as a computer scientist at the CERN physics research organization. He developed the fundamental standards that made the system functional, including Hypertext Markup Language, Hypertext Transfer Protocol, and Uniform Resource Identifiers, thereby laying the groundwork for modern internet information sharing.

4. (B) 1989
The formal proposal for an information management system that became the World Wide Web was authored in March 1989. This groundbreaking document outlined a linked mesh of information to help researchers share and update data across disparate computer systems, forming the core conceptual foundation of the modern internet web infrastructure.

5. (A) Hyper Text Markup Language
Hyper Text Markup Language serves as the foundational markup standard utilized to construct and structure documents on the World Wide Web. It employs specific structural elements called tags to annotate text, integrate multimedia elements, format page layout, and establish clickable hyperlinks that connect distinct online pages across global network servers.

6. (B) II and III only
The global internet provides the physical and protocol infrastructure required for web resources to operate. While the web is a major application, it is not the sole internet service. Independent communication services like electronic mail and File Transfer Protocol operate on the internet alongside the web to perform distinct networking operations.

7. (B) CERN (European Organization for Nuclear Research)
The World Wide Web was originally invented at CERN, the European Organization for Nuclear Research located near Geneva. The system was initially designed to help scientists and researchers automatically share and update complex experimental information across multiple university computers and international research laboratories connected through early computer networks.

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8. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Accessing web content requires client application software known as a web browser. Browsers perform the essential function of fetching HTML markup files from remote servers and rendering them into formatted visual layouts, interactive elements, and readable text. Because raw markup is unformatted, browser parsing is mandatory for effective user navigation.

9. (D) Web page
A web page is an individual digital document accessible through the World Wide Web via a web browser. Constructed primarily using Hypertext Markup Language, a web page can contain text, image files, stylesheets, scripts, and hyperlinks. Multiple related web pages are

organized together under a common domain name to form a website.

10. (A) WorldWideWeb
The first web browser application developed by Tim Berners-Lee was named WorldWideWeb, which was later renamed Nexus to avoid confusion with the overall information network. Developed on a NeXT computer, this original application functioned both as a visual browser and a web document editor for viewing early hypertext electronic pages.

11. (B) Hyper Text Transfer Protocol
Hyper Text Transfer Protocol serves as the foundational application protocol enabling communication across the World Wide Web. It defines standard rules for formatting and transmitting messages between client web browsers and network web servers, allowing clients to request web resources and enabling servers to deliver formatted hypertext content back efficiently.

12. (B) Secure
The letter S in the HTTPS acronym stands for Secure, indicating an encrypted variant of standard network communication. It incorporates security encryption mechanisms like Transport Layer Security to protect user communication from interception, tampering, or unauthorized data access while information travels across public internet routes between client browsers and servers.

13. (A) To structure and format content on a web page
The primary purpose of HTML is to structure and format digital content within web documents. It utilizes standardized markup tags to define headings, paragraphs, bullet lists, structural sections, embedded images, and clickable hyperlinks, allowing client web browsers to render organized human-readable pages consistently across various operating system platforms.

14. (A) P-3, Q-1, R-4, S-2
HTML acts as the structuring language for creating web documents, while HTTP provides the application protocol for transferring web data across networks. A URL defines the unique address location of a specific web resource, and a web browser provides the application software used to display and interact with these online pages.

15. (D) It links a web page to another web resource
A hyperlink is a reference element embedded in a digital document that enables instantaneous navigation to another section of the same page or an entirely separate online resource. Users activate hyperlinks by clicking highlighted text or graphic elements, allowing seamless movement across interlinked documents located on distributed web servers globally.

16. (C) Port 80
Port 80 is the standard logical network port assigned by internet standards for unencrypted HTTP communication traffic. Web server applications listen on this default port to process incoming client browser requests for unencrypted web pages, whereas secure HTTPS connections utilizing SSL or TLS encryption defaults to network port number 443.

17. (B) III only
Financial institutions and web services handling sensitive transactions strictly avoid unencrypted HTTP connections. They mandate HTTPS to encrypt user data in transit, thereby protecting passwords and financial details from interception. Standard HTTPS traffic operates over port 443, whereas unencrypted plain text HTTP relies on default network port 80 for basic transmission.

18. (D) Blue
In standard web browsers, unvisited text hyperlinks default to a distinct blue color with an underline formatting style. Once a user clicks on and visits the linked web page, the browser automatically changes the link appearance to a purple color to visually distinguish previously accessed resources from unvisited page targets.

19. (A) Ted Nelson
The term Hypertext was coined by American computer technology pioneer Ted Nelson during the 1960s. He defined it as non-sequential text where readers could follow interactive electronic links between related pieces of text, establishing the foundational conceptual model that later enabled the invention and structure of the World Wide Web.

20. (C) SSL and TLS
Secure Sockets Layer and its modernized successor Transport Layer Security are

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cryptographic protocols designed to provide end-to-end security over computer networks. HTTPS utilizes these security protocols to encrypt data communications, authenticate host server identities, and guarantee data integrity between client browsers and destination web servers during online transmission.

21. (A) Homepage
The homepage serves as the primary introductory landing page of a website, providing central navigation and essential site information. It acts as the default main page loaded when entering a root domain URL, guiding users through structured hierarchical menus and hyperlinks to explore various subpages hosted across the web domain.

22. (D) A website
A website is a structured collection of related web pages, multimedia files, and associated electronic resources hosted together under a distinct domain name on a web server. Accessible over internet networks, websites serve various functions including delivering information, facilitating online commercial transactions, hosting educational materials, and enabling social interaction.

23. (B) User types URL → Browser requests IP from DNS → Browser connects to Server → Server sends web page
Accessing a website begins when a user enters a target URL into the address bar. The browser queries DNS servers to translate the readable domain name into a numeric IP address. Upon resolving the address, the browser establishes a network connection to the server, which subsequently transmits requested page files.

24. (C) Google Chrome
Google Chrome is a widely used modern web browser developed by Google. It provides a client software application designed to retrieve, render, and display web pages from network servers using web standards like HTML and CSS, while running JavaScript scripts to deliver interactive web application features to users.

25. (D) Google Search
Google Search functions as a web-based search engine designed to index and locate online content across the World Wide Web, rather than an application browser. Conversely, client applications such as Mozilla Firefox, Apple Safari, and Microsoft Edge operate as dedicated web browsers used to render and display these web resources.

26. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Web pages must be hosted on dedicated web server computers to remain continuously accessible over global networks. Web servers run specialized software that continuously processes client HTTP requests, serving stored website files across network connections whenever a remote user inputs the corresponding web address into their client browser application.

27. (B) Mosaic
NCSA Mosaic, developed in 1993, is widely recognized as the first graphical web browser to achieve widespread popularity. By integrating inline images directly with text on the same page and offering an intuitive interface, Mosaic dramatically simplified web navigation, driving the explosive growth and public adoption of the web.

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28. (B) Firefox
Mozilla Firefox is a renowned open-source web browser developed and maintained by the non-profit Mozilla Foundation. Built on community-driven open standards, Firefox offers customization options, privacy protection features, and robust web developer tools, serving as a prominent alternative to proprietary browsing software available across diverse operating desktop environments.

29. (A) Every page on a website must have exactly the same URL.
Every individual web page within a website possesses a unique Uniform Resource Locator to ensure it can be addressed independently by browsers. While pages share a common root domain name, distinct path addresses differentiate individual documents, enabling precise indexing, direct navigation, and accurate linking across various sections of a website.

30. (C) To enter the URL or search query for a web page
The address bar in a web browser serves as the primary user input field for entering target URLs or entering search queries directly into search engines. Located at the top of the

browser window, it displays the web address of the currently viewed page alongside connection security indicators like lock icons.

31. (D) To store web files and serve them to client browsers
The fundamental function of a web server is to store website files, such as HTML documents, images, and scripts, and deliver them to users over the internet. Web servers process incoming HTTP or HTTPS requests from client browsers, retrieving requested resources and transmitting necessary data files across network connections.

32. (C) Uniform Resource Locator
URL stands for Uniform Resource Locator, serving as the standard address structure used to locate resources on the World Wide Web. It specifies both the access protocol and the network location of a resource, enabling client applications like browsers to retrieve specific web pages, files, or services from remote servers.

33. (B) https
In a standard Uniform Resource Locator structure, the initial segment located before the colon specifies the access protocol. In the web address provided, the protocol prefix specifies HTTPS, indicating that data transfer between the client browser and the destination web server utilizes an encrypted, secure Hypertext Transfer Protocol connection.

34. (A) P-4, Q-2, R-3, S-1
A complete URL is divided into distinct structural components. The protocol component indicates the transfer mechanism used, while the domain name identifies the host server on the network. The path specifies the server directory path where files reside, and the final segment indicates the specific file resource requested for rendering.

35. (A) Domain Name System (DNS)
The Domain Name System acts as the distributed directory service of the internet, translating human-readable domain names into numeric IP addresses required by networking equipment. When users input web addresses, DNS servers resolve these text strings into binary network addresses, facilitating routing and establishing direct network connections between devices.

36. (A) I and II only
Web servers run specialized server software like Apache, Nginx, or IIS to listen for client requests and deliver web pages using HTTP or HTTPS protocols. Their core operational function centers on processing remote network requests, rather than serving as offline tools exclusively designed for viewing local documents on personal computers.

37. (A) .gov.in
The domain extension .gov.in represents a second-level country code domain strictly reserved for official Indian government entities, ministries, and departments. Managed under national internet guidelines, this specialized extension ensures that web users can verify the authenticity and legitimate administrative authority of official government web portals operating within India.

38. (D) Apache HTTP Server
The Apache HTTP Server is a globally deployed, open-source web server application managed by the Apache Software Foundation. Designed to deliver web content over HTTP and HTTPS protocols, it processes client request loads, handles security configurations, and serves static or dynamic web files to web browsers across diverse operating systems.

39. (B) .exe
Domain extensions like .com, .net, and .org represent top-level domain names used within the Domain Name System to identify domain types on the web. Conversely, .exe is an operating system file extension designating executable computer files, rather than an internet top-level domain name used for identifying hosted web sites.

40. (C) The protocol name
In a standard URL structure, the protocol scheme always appears at the beginning, positioned directly before the colon and double slashes. This initial designation specifies the network communication protocol required by client browsers to fetch requested resources, such as HTTP or HTTPS, before defining host domain names and document pathways.

41. (D) The read-only, static web
The phrase Web 1.0 refers to the initial phase of the World Wide Web, characterized as a read-

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only environment. During this era, websites consisted primarily of static HTML pages created by content owners, where average users acted as passive consumers reading published text and images without significant interactive capabilities.

42. (A) Support for user-generated content and interaction
Web 2.0 represented a transformative evolutionary shift from static read-only web pages toward dynamic, participatory web platforms. Its defining characteristic is enabling active user participation, user-generated content creation, social networking, interactive media sharing, and collaborative web platforms where users interact with content and communicate directly with each other.

43. (B) Decentralization and blockchain technology
Web 3.0 represents an evolving paradigm built around decentralization, machine-readable semantic data, and distributed ledger technologies like blockchain. It seeks to reduce reliance on centralized corporate data hosts, empowering users with data ownership, intelligent automated processing, smart contracts, and secure peer-to-peer digital transactions across distributed network ecosystems.

44. (A) I, II, and III only
Web 1.0 focused on static web pages with limited interactivity, while Web 2.0 introduced social networking, user-created content, and dynamic platforms. Web 3.0 emphasizes semantic data processing to help machines understand context. Early Web 1.0 technology relied on simple markup code without incorporating sophisticated artificial intelligence software frameworks.

45. (A) A social media platform like Facebook or Twitter
Social media platforms embody Web 2.0 characteristics by prioritizing user-generated content, real-time social networking, interactive comments, and content sharing. Unlike static informational sites, these platforms rely on continuous user contributions, enabling collaborative communication networks and dynamic user interactions across web applications without requiring technical programming expertise from users.

46. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Web 3.0 is frequently termed the Semantic Web because it integrates standardized metadata formats that allow automated software tools to comprehend data relationships and contextual meaning. By transforming unstructured page content into machine-understandable information, software agents can process searches more intelligently, cross-referencing information logically across disparate platforms.

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47. (D) Tim O'Reilly
The term Web 2.0 was popularized by publisher and technology advocate Tim O'Reilly during the O'Reilly Media Web 2.0 Conference in 2004. He used the term to define the emerging wave of interactive, user-centered, and software-as-a-service web applications that emerged following the dot-com commercial market collapse.

48. (C) Basic HTML code
Web 1.0 websites were built primarily using basic Hypertext Markup Language code. These early static web pages incorporated straightforward formatting elements for text, simple styling tags, and hyperlinks, lacking dynamic database-driven server scripts or interactive client capabilities that later became standard across modern web applications and platforms.

49. (B) Software agents can interpret data meanings
The conceptual model of the Semantic Web mandates structuring web data so that automated software agents can interpret the meaning and contextual links of online information. By attaching standardized semantic tags, computers process data autonomously, execute complex logical queries, and integrate information efficiently across interconnected global databases and application systems.

50. (C) Static Web → Social Web → Semantic Web
The World Wide Web evolved chronologically starting with the static web generation characterized by read-only web documents. This transitioned into the social web generation focused on user content creation, dynamic platforms, and interactive social networks, followed by the semantic web generation prioritizing machine-readable data, artificial intelligence, and decentralization.

51. (A) Search Engine Optimization
SEO stands for Search Engine Optimization, representing the strategic process of enhancing web pages to improve their visibility and positioning in organic search engine results. By optimizing technical structure, keyword relevance, and link authority, websites attract increased quality web traffic from search engines without relying on paid advertising.

52. (C) To increase a website's rank in search results
The main objective of Search Engine Optimization is to improve a website's visibility and placement on search engine results pages for relevant search queries. Achieving higher search rankings increases organic user traffic, expands site discoverability, and connects web publishers with users actively seeking relevant information, products, or web services.

53. (A) It aggregates diverse information and tools into a single gateway
A web portal is an integrated online system that aggregates diverse resources, applications, news, and services into a single unified gateway interface. Unlike standard informational websites, portals generally require personalized user authentication to deliver tailored dashboards, centralizing distinct tools like email, operational tracking, and notifications for specific user bases.

54. (A) P-2, Q-3, R-4, S-1
Indian digital initiatives provide specialized public services. DigiLocker offers cloud storage for authentic electronic certificates, while UMANG unifies access to various government applications. SWAYAM delivers online education through massive open online courses, and e-Hospital provides unified digital management systems for scheduling hospital appointments and medical registrations online.

55. (B) It offers user logins for personalized dashboard services
Web portals are characterized by providing secure user authentication mechanisms that enable personalized user dashboards. Upon logging in, users receive customized content, account management controls, and aggregated digital services tailored to their specific roles, distinguishing portals from standard informational websites that display uniform static content to all site visitors.

56. (C) www.india.gov.in
The website www.india.gov.in functions as the official National Portal of India, serving as a comprehensive single-window gateway to government information and public services. Designed under the National e-Governance Plan, it provides citizens, businesses, and international entities with unified access to various central and state government services and departmental resources.

57. (D) Unified access to diverse pan-India e-Governance services
The UMANG application and web portal provide Indian citizens with unified digital access to a wide range of pan-India e-Governance services. Developed by the Ministry of Electronics and Information Technology, it integrates central, state, and local government services into one platform, facilitating online applications, document verification, and utility bill payments.

58. (A) I and II only
Ethical Search Engine Optimization, known as White Hat SEO, focuses on incorporating relevant keywords naturally into high-quality page content and structural markup tags. Conversely, tactics like hiding text by matching font color to page backgrounds represent unethical manipulate techniques that violate search engine webmaster guidelines, leading to ranking penalties.

59. (B) DigiLocker
DigiLocker is a key flagship platform under the Digital India initiative that provides Indian citizens with secure cloud storage for digital documents. It links directly to Aadhaar identity records, allowing users to access authentic digital certificates like vehicle registrations, driving licenses, and academic marksheets directly issued by authorized government institutions.

60. (B) A term typed into a search engine to find information
In Search Engine Optimization and digital searching, a keyword is a specific word or phrase that users enter into search engines to find relevant information online. Web developers analyze target keywords to optimize website content, ensuring search engine algorithms match published web pages to user queries effectively.

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61. (A) e-Commerce
Electronic commerce, widely known as e-commerce, denotes the buying, selling, and trading of goods, services, or digital products over electronic computer networks like the World Wide Web. It encompasses online retail operations, digital payment processing, electronic supply chain transfers, and automated consumer transactions conducted through dedicated commercial websites.

62. (C) Amazon
Amazon serves as a classic model of a Business-to-Consumer e-commerce platform. It enables commercial businesses and retail vendors to sell physical merchandise directly to individual retail consumers over the web, managing product listings, online shopping carts, secure financial transactions, order tracking, and automated customer delivery systems within its digital platform.

63. (D) Massive Open Online Course
MOOC stands for Massive Open Online Course, representing an online learning model designed for large-scale interactive participation and open web access. MOOC platforms host video lectures, instructional reading materials, automated quizzes, and interactive user forums, enabling global learners to pursue educational courses provided by universities and educational organizations remotely.

64. (C) e-Learning
Electronic learning, commonly designated as e-learning, refers to the utilization of web technologies and internet communication to deliver educational curricula, skills training, and learning resources. It incorporates virtual classrooms, instructional videos, downloadable reading materials, digital assessments, and interactive collaboration tools to support flexible online distance learning environments.

65. (B) SWAYAM
SWAYAM is an educational initiative launched by the Government of India to provide free online courses across school, undergraduate, and postgraduate levels. The platform hosts structured video lectures, downloadable reading materials, online self-assessment tests, and discussion forums, aiming to expand quality educational access to students across the country.

66. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
E-commerce websites require robust encryption protocols like HTTPS and Transport Layer Security to protect user communication. Because online shopping transactions involve transmitting sensitive financial and personal details, robust encryption prevents unauthorized third parties from intercepting payment credentials, maintaining transaction security and preserving customer trust during web commerce operations.

67. (A) An online collaborative encyclopedia
Wikipedia functions as an online collaborative encyclopedia built upon wiki technology software. It allows global contributors to collectively write, edit, and update informational reference articles on diverse subjects. Operating as a non-profit open-access resource, it utilizes interlinked web pages to share knowledge freely across the global internet community.

68. (C) e-Commerce / e-Finance
Online banking operates as a vital subset of financial e-commerce, allowing customers to execute monetary transactions securely via official bank web portals. Through encrypted browser sessions, users manage bank accounts, transfer funds, pay utility bills, apply for loans, and monitor transaction histories online without visiting physical retail banking branches.

69. (C) I, II and III only
E-commerce enables round-the-clock commercial operations, e-learning platforms deliver digital educational materials and evaluations, and e-governance enhances administrative transparency. Conversely, web portals frequently store and host original hosted content, personalized user dashboards, and integrated application tools directly alongside curated links to external resources, making statements I, II, and III correct.

70. (A) IV, II, I, III
A standard online e-commerce transaction follows a logical sequence. The customer begins by browsing the website catalog to locate products, subsequently adding chosen items to the digital shopping cart. Next, the user proceeds to checkout to complete payment processing, which ultimately triggers the system to issue an automated order confirmation.

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71. (B) A text file storing user preferences and session data
A HTTP cookie is a small text file created by web servers and stored on the user's browser during navigation. Cookies store small pieces of configuration data, such as login session tokens, user preferences, and shopping cart contents, enabling websites to recognize returning users and maintain persistent session states.

72. (C) To store temporary web files for faster page reloading
The primary purpose of a web browser cache is to store temporary web assets, such as images, stylesheets, and scripts, on the local device storage. Retaining these cached assets eliminates the need to re-download unchanged files on subsequent visits, significantly accelerating web page loading speed and reducing bandwidth usage.

73. (D) Cookies track session data, while cache speeds up loading
Browser cookies and browser cache serve distinct operational functions in web navigation. Cookies store small textual data parameters like session tokens, user login status, and personalized site preferences. In contrast, browser cache stores larger static media files and resource code locally to accelerate page loading speeds upon subsequent visits.

74. (A) Private Browsing mode
Private Browsing mode, also known as incognito mode, prevents web browsers from saving local navigation data on the device. While active, the browser does not record browsing history, site cookies, or form inputs, ensuring that subsequent users operating the same physical device cannot inspect local browsing activity session trails.

75. (A) P-3, Q-2, R-4, S-1
Phishing involves deceptive communication crafted to trick users into revealing sensitive credentials, whereas malware encompasses harmful software designed to exploit systems. A firewall provides a network security system filtering incoming and outgoing traffic, while antivirus software identifies, blocks, and removes malicious code from infected computer systems.

76. (B) Phishing
Phishing represents a fraudulent cyber attack method where attackers send deceptive messages mimicking legitimate organizations like banks or service providers. The primary goal is to deceive recipients into revealing sensitive personal credentials, financial account details, or passwords by directing them to fraudulent websites designed to steal confidential user information.

77. (A) I and II only
Cookies perform useful functions like maintaining user login sessions and tracking browsing behavior across websites for personalized online advertising. However, cookies are simple plain-text data files rather than executable code programs, meaning they cannot directly execute commands, replicate themselves, or install malicious software on user computing systems.

78. (C) Third-party cookies
Third-party cookies are set by web domains distinct from the primary website currently being visited by the user, such as external advertising networks or analytics services. Embedded via scripts, these cookies track user activity across multiple external websites, compiling behavioral profiles used primarily for targeted digital advertising and analytics.

79. (D) It forces the browser to download fresh web page files
Clearing browser cache and cookies deletes outdated local temporary files and stored session tokens that may cause rendering errors or login conflicts. Performing this action forces the browser to establish clean connections with remote web servers, fetching fresh files and resolving display issues caused by corrupted locally stored data.

80. (C) Secure Sockets Layer
SSL stands for Secure Sockets Layer, representing a standard security protocol developed to establish encrypted links between web servers and client browsers. Although largely superseded by modern Transport Layer Security standards, the term SSL remains widely used to describe SSL/TLS encryption securing web data transmissions over HTTPS protocols.

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81. (B) Ctrl + T
In Windows-based web browsers, the keyboard shortcut Ctrl + T instantly opens a new browsing tab within the active window. This default shortcut enables efficient multi-tab navigation,

allowing users to load and view multiple web pages simultaneously without cluttering the screen by launching separate application instances or windows.

82. (D) Ctrl + W
The keyboard shortcut Ctrl + W serves as the standard command used to close the currently active browser tab in Windows desktop environments. Utilizing this shortcut allows users to close unwanted web pages efficiently without using mouse navigation, helping streamline browser tab management across multi-tab browsing sessions.

83. (A) Omnibox
In modern browsers like Google Chrome, the combined address bar and search input box is termed the Omnibox. This unified interface element processes direct URL entries while simultaneously functioning as a search engine query box, offering web address auto-completion, instant search suggestions, mathematical calculations, and quick browser commands.

84. (C) AND
The Boolean operator AND is utilized in search engines to narrow query results by requiring all specified terms to be present on matching web pages. Applying AND ensures search algorithms exclude pages missing any specified search terms, increasing query precision when retrieving targeted information from broad web indexes.

85. (A) Search for the exact phrase match
Enclosing a search query within double quotation marks instructs search engine algorithms to match the exact word sequence and phrasing specified. This precise search operator filters out results where words appear separately or in different contextual orders, helping users locate specific document titles, direct quotes, or technical names.

86. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Utilizing precise keywords rather than conversational sentences improves search engine retrieval efficacy. Search algorithms compare search keywords against indexed page data. Unnecessary conversational filler words introduce query noise, potentially confusing indexing algorithms and yielding less relevant search results compared to concise, targeted keyword selections.

87. (B) To save a URL for easy access later
The primary purpose of the bookmark or favorites feature in web browsers is to store the URL of a web page locally. Saving bookmarks enables users to organize and quickly revisit frequently accessed web resources in the future without needing to remember complex web addresses or perform repeated web searches.

88. (C) Ctrl + D
The keyboard shortcut Ctrl + D is the universal command used in Windows web browsers to bookmark the currently active web page. Pressing this shortcut opens a prompt allowing users to quickly assign a bookmark title, select a destination storage folder, and save the page URL for future reference.

89. (D) History tab
When a user accidentally closes a browser tab, the web page address can be retrieved by accessing the browser's history section. The history log maintains a chronological list of recently visited websites, allowing users to reopen closed tabs, view past navigation sessions, and locate previously loaded web resources easily.

90. (A) Search engines
Google, Bing, and Yahoo! operate as web search engines designed to crawl, index, and organize web content across the World Wide Web. These services process search queries typed by users, returning structured lists of relevant web pages, images, videos, and documents ranked according to sophisticated relevance and authority algorithms.

91. (B) Webmail uses a browser, while an email client is installed locally
Webmail services operate through standard web browsers, enabling users to access email accounts remotely from any internet-connected computer without installing dedicated software. Conversely, desktop email clients are standalone applications installed locally on a computer that store messages on local hardware and manage email protocols directly with incoming server systems.

92. (B) Gmail
Gmail, developed by Google, is a popular web-based email service accessed through web browsers

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or mobile applications. It provides personal and enterprise email account management, offering features such as automated spam filtering, cloud storage integration, search tools, and secure communication options without requiring local email client software installation.

93. (A) Carbon Copy
CC stands for Carbon Copy in email communication standards. Adding recipient email addresses to the CC field sends secondary copies of the message to specified individuals for informational visibility, while ensuring all primary and secondary recipients can view the full list of included email addresses in the header.

94. (C) To copy a recipient while hiding their email address
The Blind Carbon Copy field in email applications sends message copies to designated recipients while keeping their email addresses hidden from all other message recipients. Using BCC preserves recipient privacy, prevents massive address harvesting during bulk mailings, and ensures secondary recipients receive information without disclosing their participation.

95. (D) Spam folder
Webmail services automatically analyze incoming messages using filter rules to detect unsolicited, fraudulent, or malicious messages. Detected bulk commercial emails and phishing attempts are routed to the spam folder, isolating suspicious messages away from the primary inbox to protect users from malicious content and cluttered mailboxes.

96. (A) I, II and III only
In webmail interfaces, unfinished composed messages save automatically to Drafts, deleted messages rest in Trash temporarily before permanent deletion, and Subject lines summarize email content. Contrary to single-recipient limits, webmail systems allow users to send single email messages simultaneously to multiple recipients across To, CC, and BCC fields.

97. (B) 25 MB
Standard free webmail providers like Gmail enforce a maximum attachment file size limit of 25 megabytes for direct email transmission. To share files exceeding this threshold, webmail platforms automatically convert large attachments into shared file links backed by integrated cloud storage services like Google Drive or Microsoft OneDrive.

98. (D) Drafts
Modern webmail interfaces continuously perform background auto-saves while users compose messages. If network connectivity drops unexpectedly, unfinished email content remains safely preserved within the system's Drafts folder. Once internet access is restored, users can reopen the draft, complete writing, and send the message without losing typed content.

99. (A) Internet Message Access Protocol
IMAP stands for Internet Message Access Protocol, serving as a standard network protocol used by email client software to retrieve messages from remote email servers. Unlike older protocols, IMAP synchronizes message state changes continuously across server hosts, enabling seamless email access across multiple devices simultaneously.

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100. (C) The maximum rate of network data transfer
Bandwidth refers to the maximum volume of digital data that can travel across a network path within a given timeframe, typically measured in bits per second. High bandwidth connections allow larger quantities of data, such as high-definition media streams, to transfer rapidly between remote web servers and client devices.

101. (A) A program that indexes web pages for search engines
A web crawler, also termed a spider or bot, is an automated software program deployed by search engines to browse the World Wide Web systematically. It traverses hyperlinks between web documents, fetching page content and sending updated data back to search engine databases for indexing and ranking processing.

102. (D) Web hosting
Web hosting refers to commercial services that provide storage space, server infrastructure, and network access required to make website content accessible on the World Wide Web. Web hosting providers maintain continuously operating server hardware connected to high-speed internet networks, allowing users worldwide to view hosted web pages upon demand.

103. (B) Manage the reservation of internet domain names
A domain name registrar is an accredited entity authorized to manage the registration and reservation of domain names within top-level domain registries. Registrars verify domain availability, assign registration rights to registrants, maintain domain WHOIS registry data, and interface with domain Name System authority records to route traffic correctly.

104. (C) PING
PING is a standard diagnostic network command used to verify connectivity with remote host computers or web servers across IP networks. It sends ICMP echo request packets to target addresses and measures round-trip transmission latency times, helping network administrators assess connection stability, response latency, and host reachability.

105. (D) Internet Service Provider
ISP stands for Internet Service Provider, referring to commercial organizations or public entities that deliver internet access and related services to individual consumers and enterprise organizations. ISPs provide physical transmission infrastructure, such as fiber, cellular, or satellite connections, enabling customer devices to connect directly to the global internet network.

106. (A) Cloud storage tools
Google Drive, Microsoft OneDrive, and Dropbox function as web-accessible cloud storage platforms. They enable users to upload, manage, edit, and back up digital files on remote server clusters over internet connections, facilitating secure multi-device synchronization and remote document collaboration through web interfaces or mobile applications.

107. (B) To distinguish human users from automated bots
CAPTCHA tests are challenge-response security mechanisms designed to distinguish legitimate human web users from automated software bots. By requiring users to resolve visual recognition challenges, type distorted characters, or complete audio checks, CAPTCHA prevents automated spam submissions, unauthorized account creations, and credential stuffing attacks on web forms.

108. (A) P-2, Q-4, R-1, S-3
Downloading involves transferring digital files from remote web servers to local computer devices, whereas uploading transfers local data to remote network locations. Refreshing reloads current web page content to retrieve updated information, and bookmarking saves web resource address locations within the browser interface for future reference.

109. (A) IP address
An IP address is a unique numerical identifier assigned to every device participating in a computer network that uses the Internet Protocol for communication. It acts as a logical network locator, allowing routers to direct web data packets accurately to target client computers or destination web server systems globally.

110. (C) Intranet
An intranet is a private, restricted computer network operated by an organization that utilizes World Wide Web protocols and standards. Isolated behind network security firewalls, intranets restrict access strictly to authorized internal staff, delivering secure operational resources, internal documentation, administrative tools, and collaborative applications without exposing data publicly.

111. (D) Deliver public services electronically to citizens
The flagship Digital India initiative relies on World Wide Web infrastructure to deliver government services, official documents, and administrative portals directly to citizens electronically. By expanding digital connectivity, the program promotes e-governance transparency, minimizes paper bureaucracy, and ensures equitable public access to essential social welfare and citizen administrative services.

112. (C) High-speed, always-on internet connectivity
Broadband refers to high-speed, always-on internet connectivity capable of transmitting data across multiple wide bandwidth channels simultaneously. Utilizing technologies like fiber optics, digital subscriber lines, cable internet, or cellular wireless networks, broadband enables high-volume data transmission necessary for smooth web browsing, video streaming, and online communications.

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113. (B) It connects everyday physical devices to the web
The Internet of Things connects everyday physical objects—such as smart appliances, industrial sensors, wearable electronics, and security systems—to internet networks. Through embedded web connectivity, these smart devices collect operational data, transmit telemetry metrics, receive remote management signals, and communicate with web platforms autonomously without manual human intervention.

114. (D) e-Governance
Electronic governance, or e-governance, denotes the deployment of web technologies and digital communications by government agencies to deliver public services, share administrative information, and handle citizen applications. It improves administrative efficiency, enhances institutional transparency, simplifies regulatory compliance, and expands public accessibility across municipal and national government operations.

115. (A) I and II only
E-governance web portals enhance administrative transparency by publishing public records online and reduce citizen footfall at physical administrative offices by enabling online transactions. However, these systems supplement rather than completely eliminate physical government personnel, who remain essential for overseeing administrative operations, managing policy enforcement, and handling offline services.

116. (C) Remote medical diagnosis and consultations
Telemedicine leverages World Wide Web infrastructure and telecommunication networks to provide remote medical diagnosis, clinical consultation, and health monitoring services. Using web platforms, secure video conferencing, and digital patient record portals, healthcare professionals assess patient conditions, offer clinical evaluations, and deliver medical advice without requiring physical co-presence.

117. (A) They host real-time news, social communication, and marketing
Modern social media platforms function as dynamic digital spaces that facilitate real-time news distribution, instant social communication, content sharing, and target digital marketing. These web applications enable millions of individual users and organizations to create content, publish commentary, build online communities, and interact globally through web interfaces.

118. (D) Spread of fake news and misinformation
A significant social challenge introduced by widespread web adoption and social media access is the rapid spread of fake news, unverified claims, and deliberate digital misinformation. Algorithmic content distribution and rapid social sharing mechanisms can amplify unverified information, posing risks to public awareness, societal trust, and informed decision-making.

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119. (B) World Wide Web Consortium
W3C stands for the World Wide Web Consortium, an international standards organization dedicated to developing open technical standards for the long-term growth of the World Wide Web. Led by web founder Tim Berners-Lee, the consortium formulates specifications like HTML, CSS, and accessibility standards to ensure web platform interoperability.

120. (A) Creation of ARPANET → Invention of WWW → Launch of Web 2.0
The historical timeline of internet developments began with the creation of ARPANET in the late 1960s, establishing packet-switching networks. This was followed by Tim Berners-Lee inventing the World Wide Web in 1989, and subsequently the evolution into Web 2.0 interactive social platforms during the early 2000s.

121. (B) 404 Not Found
The 404 Not Found HTTP status code is a standard client-side error message generated when a web server cannot locate a requested web resource. It typically occurs when users click broken hyperlinks, type incorrect resource URLs into address bars, or attempt to access web pages that have been deleted.

122. (C) 500 Internal Error
The 500 Internal Server Error status code indicates a generic server-side failure where the destination web server encounters an unexpected condition preventing it from fulfilling a client request. It signals execution issues within server scripts, database connection failures, or server software misconfigurations that prevent proper resource delivery.

123. (C) F5
Pressing the F5 function key serves as the default universal keyboard shortcut to reload or refresh the current page across Windows web browsers. Executing this command prompts the browser to re-query the web server, downloading updated page content and dynamic assets to display the most current version.

124. (B) Uploading
Uploading refers to the data transfer process where digital files are transmitted from a local computer device to a remote network destination, such as a web server or cloud storage host. It is used when posting photographs, submitting online web forms, publishing web pages, or attaching digital documents.

125. (A) .html or .htm
Static web page documents are standard files saved using .html or .htm file extensions. These extensions signal to operating systems and client web browsers that files contain Hypertext Markup Language formatting tags, allowing browsers to interpret code structure correctly and render organized text, hyperlinks, and visual web elements.

126. (C) FTP
File Transfer Protocol is a standard network protocol designed specifically for transferring bulk computer files between clients and servers across TCP/IP networks. While HTTP optimizes web document rendering, FTP offers specialized capabilities for uploading, downloading, renaming, and managing large files and administrative directories on remote network hosts.

127. (D) It blocks unauthorized advertising windows or tabs
A pop-up blocker is a built-in browser feature or software extension designed to block secondary advertising windows, intrusive overlay banners, or unwanted pop-up tabs from opening automatically. By restricting unsolicited browser windows, pop-up blockers streamline web navigation, reduce screen clutter, and enhance user browsing security online.

128. (C) A system monitoring network traffic based on rules
A firewall is a critical network security system that monitors, filters, and controls incoming and outgoing network communication based on predefined security rules. Operating as software or dedicated hardware, it establishes a protective boundary between trusted internal networks and untrusted external networks, preventing unauthorized access and cyber threats.

129. (B) Hyperlinks can link to text, images, email addresses, and downloadable files.
Hyperlinks provide interactive structural links within web pages, connecting users to various target resources. A single hyperlink can target external websites, internal page anchors, downloadable media files, interactive scripts, image graphics, or trigger mail client software with mailto email links, demonstrating flexible navigation versatility across the web.

130. (D) Apple
Safari is a graphical web browser developed and maintained by Apple Inc. It serves as the primary default web browser across Apple hardware operating systems, including macOS, iOS, and iPadOS. Built on the open-source WebKit rendering engine, Safari provides fast browsing performance, privacy protection features, and ecosystem integration.

131. (A) Microsoft
Microsoft Edge is a cross-platform web browser developed by Microsoft to replace Internet Explorer. Built on the open-source Chromium rendering engine, Edge delivers compatibility with modern web standards, integration with Windows security features, cloud synchronization across devices, and optimized system performance for viewing online content effectively.

132. (C) Microsoft Edge
Microsoft Edge is the official default web browser integrated into the Microsoft Windows 10 and Windows 11 operating systems. Replacing older Internet Explorer software, Edge provides built-in integration with Windows services, modern web standards compliance, enhanced security features, and fast rendering performance for general web browsing.

133. (A) Web application
A web application is a software program hosted on remote web servers and accessed by users through client web browsers over network connections. Unlike traditional desktop applications installed on local hardware, web applications execute

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processing tasks on server backend systems, rendering interactive user interfaces dynamically within browser windows.

134. (D) The layout adjusts automatically across different devices
Responsive web design is an approach to web development where site layouts adjust dynamically to adapt to various screen sizes and device viewports. Utilizing flexible fluid grids, flexible images, and CSS media queries, responsive design guarantees optimal readability and usable navigation whether viewed on smartphones, tablets, or desktop monitors.

135. (A) I and II only
Safe web navigation involves avoiding entering personal authentication credentials on unencrypted HTTP websites and keeping browser software updated to patch security vulnerabilities. Browsing in incognito mode does not block malware links, and reusing identical passwords across multiple online accounts compromises overall digital security if a breach occurs.

136. (C) Virtual Private Network (VPN)
A Virtual Private Network establishes an encrypted network tunnel over public internet connections, shielding browsing data from local network eavesdropping. By routing internet traffic through secure intermediary servers, a VPN masks device IP addresses, preserves online user privacy, and protects sensitive data transmissions on public Wi-Fi networks.

137. (D) The Deep Web
The Deep Web comprises online content that is not indexed by standard search engine crawlers, requiring direct login credentials, specialized configurations, or database query inputs to access. It encompasses protected web resources like private email inboxes, online banking portals, subscription databases, government record archives, and medical databases.

138. (A) Cyber security
Cyber security encompasses the comprehensive practices, technologies, policies, and operational controls deployed to protect digital systems, networks, web applications, and sensitive electronic data from unauthorized access, cyber attacks, or damage. It focuses on maintaining data confidentiality, system operational integrity, and continuous service availability across interconnected global digital environments.

139. (B) Designing websites for usability by people with disabilities
Web accessibility involves designing and developing web pages, multimedia content, and digital applications so that individuals with visual, auditory, physical, or cognitive disabilities can navigate and interact with them effectively. Adhering to accessibility standards like WCAG ensures web resources remain usable through assistive technologies like screen readers.

140. (B) Video conferencing and virtual collaboration tools
Modern web-based video conferencing and virtual collaboration tools have fundamentally enabled remote employment and virtual team meetings. By providing real-time audio-visual communication, interactive screen sharing, instant digital messaging, and synchronized document editing over high-speed web connections, these tools allow distributed teams to collaborate seamlessly regardless of geographical location.

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CHAPTER 04
Hardware and Software

1. Which of the following best defines computer hardware?
(A) The physical, tangible components of a computer system
(B) The collection of programs that run on a computer
(C) The data processed by the computer
(D) The invisible instructions stored in memory

2. What is the primary function of software in a computer system?
(A) To provide physical power to the components
(B) To store data permanently on a magnetic disk
(C) To provide a set of instructions that tells the hardware what to do
(D) To connect the computer to a physical network

3. Which of the following is considered a hardware component?
(A) Microprocessor
(B) Operating System
(C) Device Driver
(D) Web Browser

4. Match List I with List II and select the correct answer using the options given below:
List I: (Component)
P. Motherboard
Q. Windows 11
R. MS Word
S. Hard Disk
List II: (Type)
1. Application Software
2. Hardware
3. Storage Device
4. System Software
(A) P-2, Q-4, R-1, S-3
(B) P-3, Q-1, R-4, S-2
(C) P-2, Q-1, R-4, S-3
(D) P-4, Q-2, R-3, S-1

5. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): Computer hardware cannot perform any task on its own without software.
Reason (R): Software provides the step-by-step instructions required to operate and control the hardware.
Select the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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6. Consider the following statements regarding the difference between hardware and software:
I. Hardware wears out over time, whereas software does not physically wear out.
II. Software can be touched and felt, whereas hardware is strictly virtual.
III. Hardware is affected by computer viruses, whereas software is immune.
Which of the above statement(s) is/are correct?
(A) Only I
(B) Only I and II
(C) Only II and III
(D) I, II and III

7. Which of the following best describes a fundamental characteristic of software?
(A) It consists of electronic circuits and cables.
(B) It is a physical device used to enter data.
(C) It is a component that provides cooling to the system.
(D) It is an intangible set of instructions or programs.

8. In a computer system, what bridges the gap between the user and the hardware?
(A) System Software
(B) Application Software
(C) The Motherboard
(D) The Cooling Fan

9. Identify the item that does NOT belong to the category of computer software.
(A) Microsoft Excel

(B) Solid State Drive
(C) Linux Kernel
(D) Antivirus Program

10. Identify the odd one out from the following options based on hardware and software classification.
(A) Keyboard
(B) Compiler
(C) Monitor
(D) Printer

11. What is the full form of CPU in computer terminology?
(A) Central Processing Unit
(B) Core Processing Unit
(C) Computer Principle Unit
(D) Control Processing Unit

12. Which component is generally known as the "brain" of the computer?
(A) Random Access Memory
(B) Hard Disk Drive
(C) Central Processing Unit
(D) Motherboard

13. What is the main function of the Arithmetic Logic Unit (ALU)?
(A) To store data permanently in secondary memory devices
(B) To regulate and cool down the physical processor unit
(C) To fetch instructions directly from the main memory
(D) To perform arithmetic and logical operations

14. Which part of the CPU directs and coordinates the activities of all other computer components?
(A) Arithmetic Logic Unit (ALU)
(B) Cache Memory
(C) Control Unit (CU)
(D) Instruction Register

15. What are registers in the context of a CPU?
(A) Large secondary storage devices used for permanent data backup
(B) High-speed storage locations inside the CPU for temporary data
(C) Hardware connectors on the motherboard for external peripherals
(D) Software programs designed to manage the main operating system

16. Which of the following is the fastest memory area in a computer system?
(A) Hard Disk
(B) Main Memory (RAM)
(C) Cache Memory
(D) CPU Registers

17. Consider the following statements about CPU components:
I. The ALU handles addition, subtraction, AND, and OR operations.
II. The Control Unit coordinates the flow of data inside the CPU.
III. Registers are the slowest form of memory in a computer.
IV. The CPU requires a cooling mechanism because it generates heat during operation.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

18. What is a motherboard in a computer?
(A) The primary software system that manages all computer operations
(B) The primary internal storage device where user files are saved
(C) The main circuit board connecting all hardware components
(D) A peripheral hardware device used for displaying video graphics

19. Where is the CPU physically installed in a typical desktop computer?
(A) In a dedicated motherboard socket
(B) Encased directly inside the hard disk drive unit
(C) Externally attached through a high-speed USB port
(D) Mounted directly inside the primary Power Supply Unit

20. Match List I with List II and select the correct answer using the options given below:
List I: (CPU Part)
P. ALU
Q. CU
R. Register
S. System Clock
List II: (Function)
1. Synchronizes all computer operations
2. Decodes instructions and generates control signals
3. Holds data temporarily during execution
4. Performs logical operations like AND, OR

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(A) P-4, Q-2, R-3, S-1
(B) P-2, Q-4, R-1, S-3
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

21. Which part of the CPU is responsible for checking whether a given number is greater than another number?
(A) Control Unit
(B) Arithmetic Logic Unit
(C) Memory Buffer Register
(D) Program Counter

22. The process of fetching an instruction from memory and deciding what it means is primarily the responsibility of the:
(A) Motherboard
(B) Arithmetic Unit
(C) Control Unit
(D) Accumulator

23. Which specific register holds the address of the next instruction to be executed?
(A) Instruction Register (IR)
(B) Memory Data Register (MDR)
(C) Accumulator (ACC)
(D) Program Counter (PC)

24. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): CPU registers operate at much higher speeds than the main memory (RAM).
Reason (R): Registers are located physically inside the CPU itself and do not require bus travel to main memory.
Select the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

25. Which of the following is NOT a fundamental sub-unit of the CPU?
(A) Arithmetic Logic Unit
(B) Video Graphics Array
(C) Control Unit
(D) Registers

26. What does RAM stand for?
(A) Read Access Memory
(B) Random Access Memory
(C) Real-time Application Memory
(D) Readable Automatic Memory

27. What does the term 'volatile memory' mean?
(A) Memory that loses its data when the power is turned off
(B) Memory that retains data even when the power is turned off
(C) Memory that is read-only and cannot be altered
(D) Memory used only for backing up large files

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28. Which of the following is an example of non-volatile memory?
(A) Dynamic Random Access Memory (DRAM)
(B) Static Random Access Memory (SRAM)
(C) Read Only Memory (ROM)
(D) High-speed CPU Cache Memory

29. What is the full form of ROM?
(A) Read Online Memory
(B) Random Output Memory
(C) Recorded Open Memory
(D) Read Only Memory

30. Which of the following represents the main difference between RAM and ROM?
(A) RAM is non-volatile, whereas ROM is volatile.
(B) RAM stores data permanently, whereas ROM is only for temporary calculations.
(C) RAM is read-and-write memory, whereas standard ROM is typically read-only.
(D) RAM is found on external drives, whereas ROM is on the motherboard.

31. Which of the following is categorized as Primary Memory?
(A) Hard Disk Drive
(B) RAM
(C) Solid State Drive
(D) Pen Drive

32. Consider the following statements about Primary Memory:
I. It is directly accessible by the CPU.
II. It has a larger storage capacity than secondary memory.
III. It operates faster than secondary memory.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II and III

33. Why is secondary memory required in a computer system?
(A) To store data permanently for future use
(B) To significantly increase overall CPU processing speeds
(C) To serve as a direct replacement for the Arithmetic Logic Unit
(D) To provide temporary working storage during active calculations

34. Where is the booting program (BIOS/UEFI) typically stored in a computer?
(A) In the RAM
(B) In the Cache Memory
(C) In the ROM
(D) In the ALU

35. Match List I with List II and select the correct answer using the options given below:
List I: (Memory Type)
P. RAM
Q. ROM
R. Cache
S. Hard Disk
List II: (Characteristic)
1. Highest capacity, permanent storage
2. Volatile, main working memory
3. High-speed buffer between CPU and RAM
4. Non-volatile, stores startup instructions
(A) P-2, Q-4, R-3, S-1
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-3, R-4, S-1
(D) P-3, Q-4, R-2, S-1

36. Which of the following devices is classified as secondary memory?
(A) Main System Motherboard
(B) Random Access Memory (RAM)
(C) High-speed Cache Memory
(D) Hard Disk Drive

37. Which type of RAM requires continuous refreshing to retain data?
(A) SRAM (Static RAM)
(B) DRAM (Dynamic RAM)
(C) VRAM (Video RAM)
(D) NVRAM (Non-Volatile RAM)

38. What does EPROM stand for?
(A) Electrical Portable Read Only Memory
(B) Extended Programmable Read Only Memory
(C) Erasable Programmable Read Only Memory
(D) Easily Programmable Read Only Memory

39. If there is a sudden power cut while you are typing an unsaved document in a word processor, where does the lost data reside at the time of loss?
(A) ROM
(B) Hard Disk
(C) Motherboard
(D) RAM

40. BIOS is an essential program for booting a computer. What does BIOS stand for?
(A) Basic Input Output System
(B) Basic Internal Operating System
(C) Binary Input Output Software
(D) Built-In Operating Software

41. When comparing primary memory and secondary memory, which statement is true?
(A) Secondary memory is faster and significantly more expensive than primary memory.
(B) Primary memory is faster and more expensive per byte.
(C) Both memory types possess identical access speeds but feature different capacities.
(D) Secondary memory components connect directly to high-speed CPU registers.

42. Firmware is a specialized type of software that is tightly linked to hardware. Where is firmware typically stored?
(A) Random Access Memory
(B) Read Only Memory
(C) Cooling Fan
(D) USB Port

43. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): Hard disk drives are preferred over RAM for the long-term storage of user files.
Reason (R): RAM is volatile and loses all its contents when the system power is turned off.
Select the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

44. Data must be loaded into which component before it can be processed by the CPU?
(A) Hard Disk Drive
(B) Optical Drive
(C) RAM

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(D) Pen Drive

45. Which of the following does NOT belong to the category of primary memory?
(A) Internal CPU Registers
(B) High-Speed Cache Memory
(C) Random Access Memory (RAM)
(D) Solid State Drive

46. What underlying technology does a traditional Hard Disk Drive (HDD) use to store data?
(A) Optical laser technology
(B) Flash memory technology
(C) Magnetic storage technology
(D) Biological storage technology

47. What is the full form of SSD in the context of computer storage?
(A) System Storage Drive
(B) Solid State Drive
(C) Secure Storage Disk
(D) Synchronous Static Drive

48. What is the primary advantage of a Solid State Drive (SSD) over a traditional Hard Disk Drive (HDD)?
(A) SSDs rely on complex moving mechanical parts that make them much cheaper to produce.
(B) SSDs utilize high-density magnetic platters to achieve significantly larger storage capacities.
(C) SSDs are much more vulnerable to physical shock damage when compared to traditional HDDs.
(D) SSDs offer faster read/write speeds using flash memory.

49. What does CD stand for in storage media?
(A) Compact Disk
(B) Computer Disk
(C) Compressed Data
(D) Central Drive

50. CD and DVD drives use which type of technology to read and write data?
(A) Magnetic
(B) Semiconductor Flash
(C) Optical (Laser)
(D) Sequential

51. Consider the following statements about secondary storage devices:
I. A pen drive relies on flash memory technology.
II. An SSD has no moving mechanical parts.
III. A Hard Disk Drive uses optical lasers to read data.
IV. A DVD has a higher storage capacity than a standard CD.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

52. A pen drive connects to a computer primarily through which interface?
(A) VGA port
(B) Audio jack
(C) HDMI port
(D) USB port

53. Which of the following devices is an example of flash memory?
(A) Magnetic Tape
(B) Pen Drive
(C) Hard Disk Drive
(D) CD-ROM

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54. What is the standard storage capacity of a normal single-layer DVD?
(A) 700 MB
(B) 1.44 MB
(C) 4.7 GB
(D) 25 GB

55. What is the approximate standard storage capacity of a typical CD-R?
(A) 700 MB
(B) 1.44 MB
(C) 4.7 GB
(D) 1 TB

56. Which of the following is NOT an optical storage device?
(A) Hard Disk
(B) CD-ROM
(C) DVD
(D) Blu-ray Disk

57. The rotating magnetic disks inside a Hard Disk Drive are called:
(A) Read/Write Heads
(B) Platters
(C) Concentric Tracks
(D) Storage Sectors

58. Which of the following is a sequential access storage device?

(A) Hard Disk Drive
(B) Magnetic Tape
(C) Solid State Drive
(D) DVD

59. Storage devices like Hard Disks and SSDs are classified as what type of access devices?
(A) Direct Access
(B) Strict Sequential Access
(C) Permanent Read-Only Access
(D) Temporary Volatile Access

60. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): Modern laptops increasingly use SSDs rather than HDDs as their primary secondary storage.
Reason (R): SSDs are faster, more durable, and consume less power than HDDs.
Select the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

61. Which of the following secondary storage devices is most recognized for its portability and plug-and-play convenience?
(A) Fixed Internal Hard Disk Drive
(B) System Motherboard BIOS Chip
(C) High-Speed Internal CPU Cache Memory
(D) USB Pen Drive

62. Match List I with List II and select the correct answer using the options given below:
List I: (Storage Device)
P. Hard Disk Drive
Q. CD/DVD
R. Solid State Drive
S. Magnetic Tape
List II: (Technology)
1. Sequential Magnetic
2. Optical
3. Direct Magnetic
4. Flash Memory
(A) P-3, Q-2, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-2, S-1
(D) P-2, Q-3, R-1, S-4

63. What does CD-ROM stand for?
(A) Compact Disk Random Output Memory
(B) Compact Disk Read Only Memory
(C) Computer Disk Read Only Memory
(D) Common Data Read Only Memory

64. Identify the odd one out among the following secondary storage devices.
(A) Pen Drive
(B) SD Card
(C) Solid State Drive
(D) Static RAM

65. Which of the following storage devices has no moving physical parts?
(A) Solid State Drive
(B) Traditional Hard Disk Drive
(C) Optical CD-ROM Drive
(D) Magnetic Floppy Disk Drive

66. Where is cache memory typically located to improve processing speed?
(A) Between the Keyboard and the Motherboard
(B) Between the RAM and Hard Disk
(C) Between the CPU and Main Memory (RAM)
(D) Between the Power Supply and Motherboard

67. What is the main purpose of cache memory?
(A) To store frequently used data and instructions for rapid CPU access
(B) To store the core operating system files permanently on the primary drive
(C) To serve as an automated secondary backup unit for internal hard disk data
(D) To continuously run background virus scans and protect active memory files

68. Consider the following computer memories:
I. Hard Disk
II. CPU Registers
III. Main Memory (RAM)
IV. Cache Memory
Which of the following represents the correct sequence from FASTEST to SLOWEST access speed?
(A) II, IV, III, I
(B) I, III, IV, II
(C) II, III, IV, I
(D) IV, II, III, I

69. What is the smallest unit of measurement for computer memory?
(A) Byte
(B) Bit
(C) Nibble
(D) Pixel

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70. How many bits make up one Nibble?
(A) 2
(B) 4
(C) 8
(D) 16

71. How many bits are in a standard Byte?
(A) 4
(B) 8
(C) 16
(D) 32

72. In computer terminology, 1 Kilobyte (KB) is exactly equal to:
(A) 1000 Bytes
(B) 1024 Bytes
(C) 1048 Bytes
(D) 1000 Bits

73. Which of the following represents the correct ascending order of memory measurement units?
(A) Byte, KB, GB, MB, TB
(B) Byte, MB, KB, GB, TB
(C) Byte, KB, MB, GB, TB
(D) KB, Byte, MB, TB, GB

74. 1 Megabyte (MB) is equal to:
(A) 1024 Kilobytes (KB)
(B) 1024 Gigabytes (GB)
(C) 1000 Kilobytes (KB)
(D) 1024 Bytes

75. Consider the following statements about memory units:
I. A bit can hold a value of either 0 or 1.
II. 8 bits combine to form 1 Byte.
III. 1 Terabyte (TB) is equal to 1024 Megabytes (MB).
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II and III

76. 1 Gigabyte (GB) is equal to:
(A) 1024 Kilobytes (KB)
(B) 1024 Megabytes (MB)
(C) 1024 Terabytes (TB)
(D) 1000 Megabytes (MB)

77. 1 Terabyte (TB) is equal to:
(A) 1024 Megabytes (MB)
(B) 1024 Bytes
(C) 1024 Gigabytes (GB)
(D) 1024 Kilobytes (KB)

78. What term is used to describe half of a byte?
(A) Bit
(B) Pixel
(C) Nibble
(D) Word

79. Like RAM, what is the data retention characteristic of Cache memory?
(A) It is strictly non-volatile and retains all stored data without electric power.
(B) It is volatile and loses contents when power is off.
(C) It permanently stores system firmware and hardware bootstrap configurations.
(D) It functions primarily as a high-density removable optical storage medium.

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80. Consider four files with the following sizes:
File A: 500 MB
File B: 1 GB
File C: 2000 KB
File D: 2 TB
Which sequence places these files in ascending order of size?
(A) File A, File B, File C, File D
(B) File C, File A, File B, File D
(C) File C, File B, File A, File D
(D) File D, File B, File A, File C

81. An Operating System (such as Windows or Linux) is an example of which type of software?
(A) System Software
(B) Application Software
(C) Utility Software
(D) Freeware

82. What is the primary purpose of System Software?
(A) To help end users compose text documents, spreadsheets, and visual presentations
(B) To serve as an interactive web browser for browsing internet websites and media
(C) To manage hardware resources and support other software
(D) To automatically scan internal drives for malicious computer viruses and malware

83. Software designed to perform specific tasks for the user, such as word processing or video editing, is called:
(A) Application Software
(B) Low-level System Control Software
(C) Embedded Hardware Firmware
(D) Main Operating System Software

84. Which of the following is an example of Application Software?
(A) Microsoft Windows 10
(B) Android OS
(C) Device Driver
(D) Microsoft Word

85. Which of the following is an example of System Software?
(A) Adobe Photoshop
(B) Linux
(C) VLC Media Player
(D) MS Excel

86. Consider the following statements about software classification:
I. System software interacts directly with the hardware.
II. Application software requires system software to run.
III. MS PowerPoint is an example of system software.
IV. The Operating System is the most important system software.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

87. What is the main function of Utility Software?
(A) To provide interactive entertainment and media applications such as modern video games
(B) To serve directly as the primary central processing unit for executing system logic
(C) To manufacture, assemble, and construct physical computer hardware components
(D) To analyze, configure, optimize, and maintain a computer

88. Which of the following programs is an example of Utility Software?
(A) Antivirus Program
(B) Microsoft Excel Spreadsheet
(C) Google Chrome Web Browser
(D) Linux Operating System Kernel

89. A program that reorganizes files on a hard disk so that they are stored in contiguous sectors is known as a:
(A) Internet Web Browser
(B) Disk Defragmenter
(C) Software Code Compiler
(D) Document Word Processor

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90. What is Firmware?
(A) A removable physical hardware component of the computer system that is easily replaced
(B) Low-level software controlling specific hardware devices
(C) An end-user application program designed exclusively for commercial enterprise data management
(D) A specialized malicious software virus engineered to damage motherboard microcontrollers

91. In a standard PC, where is the system firmware (BIOS/UEFI) typically stored?
(A) In motherboard ROM or Flash memory
(B) Directly inside high-speed internal CPU registers
(C) Permanently stored on a high-density external optical DVD-ROM
(D) Encased within the computer's primary Power Supply Unit

92. What is the role of Driver Software (Device Driver)?
(A) To control internal system power distribution and drive cooling fans at maximum speeds
(B) To execute automated user commands and generate keyboard inputs within applications
(C) To enable OS communication with specific hardware
(D) To create compressed user backup data files across external network storage drives

93. A Device Driver is technically classified under which broad category of software?
(A) Application Software
(B) Malware
(C) Open-source Application
(D) System Software

94. Match List I with List II and select the correct answer using the options given below:
List I: (Software Example)
P. Windows 11
Q. MS PowerPoint
R. Disk Cleanup
S. Printer Driver
List II: (Category)
1. Utility Software
2. System Software (Driver)
3. Operating System
4. Application Software

(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-1, Q-2, R-3, S-4

95. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): If you connect a new printer to a computer, it may not work immediately.
Reason (R): The computer often requires a specific Device Driver to understand and communicate with the newly connected hardware.
Select the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

96. Which software manages the allocation of memory, CPU time, and disk space for running applications?
(A) Hardware Device Driver
(B) Internet Web Browser
(C) System Antivirus Program
(D) Operating System

97. Which is the fundamental difference between System Software and Application Software?
(A) System software manages resources; Application software does user tasks.
(B) System software enables direct end-user productivity work, whereas application software controls physical hardware.
(C) System software is always distributed free of cost, whereas application software must always be purchased.
(D) System software executes exclusively inside RAM, whereas application software runs directly from motherboard ROM.

98. A word processor, used to type letters and reports, belongs to which category?
(A) Low-level System Software
(B) Embedded Microcode Firmware
(C) Application Software
(D) System Utility Software

99. Data Backup software, which helps protect data by copying it to another location, is an example of:
(A) Utility Software
(B) Application Software
(C) Firmware
(D) Device Driver

100. Updating the firmware of a hardware device usually means:
(A) Replacing the physical microcontroller integrated chip directly on the main circuit board
(B) Installing an upgraded primary desktop operating system onto the main storage hard disk
(C) Removing accumulated dust and debris physically from sensitive internal hardware components
(D) Updating permanent instructions in its ROM or Flash memory

101. What does the term "Open-source software" imply?
(A) The software code is permanently open and unprotected against external malicious virus attacks.
(B) Its source code is freely accessible to view, edit, and share.
(C) The software program is restricted to operate exclusively when connected to open local networks.
(D) The software executes purely in abstract virtual space and requires no physical computer hardware.

102. Which of the following operating systems is a well-known example of Open-source software?
(A) Microsoft Windows
(B) Apple macOS
(C) Linux
(D) iOS

103. Which definition best describes Freeware?
(A) Software offered free during an initial trial period, requiring full paid registration afterward.
(B) Commercial software applications where end users receive monetary compensation for using the product.
(C) Temporary software utilities designed to automatically remove themselves from storage after one use.
(D) Free software provided without access to its source code.

104. What is Shareware?
(A) Software provided free on a trial basis,

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requiring payment for full features.
(B) Multi-user software applications shared across local computer networks requiring group interaction.
(C) Fully accessible public software applications whose complete source code is freely available to all.
(D) Physical computing hardware peripheral components shared simultaneously between two workstations.

105. What is the key difference between Freeware and Open-source software?
(A) Freeware mandatory payments apply after an initial trial duration, whereas open-source software remains entirely free permanently.
(B) Freeware keeps source code hidden; Open-source makes source code available.
(C) Freeware licensing is strictly restricted to commercial corporate environments, whereas open-source software is limited to personal use.
(D) There are no technical or legal distinctions between them; both are identical terms for open-access software distribution models.

106. Software that is owned by an individual or a company and restricts users from modifying or sharing its source code is known as:
(A) Open-source Software
(B) Proprietary Software
(C) Freeware
(D) Public Domain Software

107. Consider the following statements about software distribution models:
I. Shareware is intended to let a user try a product before buying it.
II. Freeware is distributed free of cost but remains copyrighted.
III. Open-source software never allows commercial use.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II and III

108. Which type of software is often distributed with a 30-day trial limit?
(A) Freeware
(B) Open-source
(C) Shareware
(D) Public Domain

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109. What is the purpose of a software license?
(A) To optimize download bandwidth and significantly accelerate internet speeds during software installation.
(B) To function directly as an integrated hardware device driver required for newly attached external peripherals.
(C) To safeguard sensitive motherboard electronics and microprocessors from sudden electrical voltage power surges.
(D) To define the legal terms and restrictions for software use.

110. When purchasing proprietary software such as Microsoft Office, what is actually being acquired?
(A) Complete legal ownership and intellectual copyright of the underlying software source code.
(B) Full commercial rights to modify, reproduce, and freely redistribute copies to other individuals.
(C) A license granting usage rights under specified conditions.
(D) The physical hard copy blueprints and raw compiled source files created by software developers.

111. In the context of software licensing, what is the full form of EULA?
(A) Electronic Utility License Agreement
(B) End User License Agreement
(C) Enterprise User Legal Agreement
(D) Essential Update License Application

112. Which of the following is NOT an open-source software?
(A) Mozilla Firefox
(B) VLC Media Player
(C) Android Operating System
(D) Microsoft Windows 11

113. The Android mobile operating system is largely based on which open-source kernel?
(A) Linux
(B) Windows NT
(C) macOS
(D) Unix

114. Under which type of software licensing is a programmer legally permitted to modify the software's original source code to add a new feature?
(A) Proprietary Licensing
(B) Shareware Licensing

(C) Open-source Licensing
(D) Closed-source Licensing

115. Microsoft Word is best categorized as what kind of software in terms of licensing?
(A) Proprietary Software
(B) Open-source Software
(C) Freeware
(D) Public Domain Software

116. Which programming language is composed entirely of binary sequences (0s and 1s) and is directly understood by the CPU?
(A) High-Level Language
(B) Assembly Language
(C) Natural Language
(D) Machine Language

117. Which programming language uses symbolic codes or mnemonics (like ADD, SUB, MOV) instead of binary numbers?
(A) Machine Language
(B) Assembly Language
(C) High-Level Language
(D) Scripting Language

118. What is the primary benefit of a High-Level Language (HLL) like Python or Java?
(A) It executes directly on hardware much faster than low-level machine code instructions.
(B) It requires absolutely no translation, compilation, or interpretation by the computer CPU.
(C) It is closer to human language and easier to write.
(D) It operates completely independently without requiring a host computer operating system.

119. A translator that reads the entire source code of a high-level language program and converts it into machine code all at once is called a:
(A) Interpreter
(B) Assembler
(C) Debugger
(D) Compiler

120. A translator that reads, translates, and executes high-level language code line by line is called an:
(A) Interpreter
(B) Assembly Language Assembler
(C) Source Code Batch Compiler
(D) Program Object Code Linker

121. Consider the following statements about programming languages and translators:
I. Machine language is hardware-dependent.
II. An Assembler converts assembly language into machine language.
III. Compilers and Interpreters convert high-level language into machine language.
IV. High-level languages are easier for the CPU to process without translation.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

122. Which software translator converts Assembly language instructions into Machine language?
(A) Compiler
(B) Assembler
(C) Interpreter
(D) Operating System

123. Which of the following is an example of a High-Level Programming Language?
(A) Python
(B) Binary Code
(C) x86 Assembly
(D) CPU Microcode

124. Why is machine language considered "hardware-dependent"?
(A) Because it demands a specialized high-resolution video monitor to display its underlying binary code.
(B) Because executing machine instructions physically reconfigures the silicon circuits on the motherboard.
(C) Because code for one CPU architecture may not run on another.
(D) Because machine language files must be stored on and executed directly from external hard drives.

125. In terms of error detection during translation, which method stops and reports an error as soon as it encounters a mistake on a specific line?
(A) Assembler
(B) Compiler
(C) Text Editor
(D) Interpreter

126. What is the function of the Power Supply Unit (PSU) in a computer?
(A) To provide temporary battery power backup

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to the system during an external electric power cut.
(B) To serve as an inline electrical surge protector designed to protect the external computer monitor.
(C) To convert incoming AC power into DC power for internal parts.
(D) To boost overall system processing speed by safely delivering higher operating voltage to the CPU.

127. What is the full form of SMPS, a common component in desktop computer power supplies?
(A) Simple Mode Power Supply
(B) Switched Mode Power Supply
(C) Synchronous Machine Power System
(D) Static Memory Power Switch

128. Why is a cooling fan essential for the CPU?
(A) To block air currents and completely prevent fine dust particles from entering RAM slots.
(B) To generate auxiliary kinetic electricity required to power motherboard microcontrollers.
(C) To absorb mechanical vibrations and reduce the operational noise made by the hard drive.
(D) To dissipate processor heat and prevent system overheating.

129. What is the full form of USB, the most common port used to connect peripherals?
(A) Universal Serial Bus
(B) United System Bus
(C) Universal Synchronous Board
(D) Uniform Serial Bus

130. What is the full form of HDMI, a common port used for connecting monitors and TVs?
(A) High-Density Memory Storage Interface
(B) Highly Dynamic Multiple Network Input
(C) High-Definition Multimedia Interface
(D) High-Definition External Monitor Input

131. Which types of signals are transmitted through an HDMI port?
(A) High-definition video and digital audio
(B) Low-resolution uncompressed analog video signals only
(C) Uncompressed multi-channel digital audio signals only
(D) High-speed local area network data transmissions only

132. A VGA port is traditionally used to connect which of the following devices to a computer?
(A) A high-speed network laser printer
(B) A wireless network internet router
(C) An external set of audio speakers
(D) A computer monitor

133. Consider the following statements about computer ports:
I. A USB port can supply power to a connected device like a smartphone.
II. A VGA port carries both audio and video signals.
III. An HDMI port is a digital interface.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II and III

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134. The term "Plug and Play" associated with USB means:
(A) You must completely power off and unplug the computer system before physically attaching the device.
(B) The connected peripheral device automatically launches a media player and starts playing background music.
(C) The OS automatically detects and sets up the device.
(D) The device will function only after the end user manually writes and executes a specialized device script.

135. Which of the following is a routine software maintenance task for a computer?
(A) Upgrading physical RAM memory modules on the motherboard
(B) Replacing the main computer motherboard circuit board
(C) Gently wiping the external monitor screen with a micro-fiber cloth
(D) Disk cleanup and virus scanning

136. Why is it important to keep the internal hardware of a computer free from excessive dust accumulation?
(A) Dust blocks cooling fans, causing system overheating.
(B) Dust particles physically alter magnetic disk surfaces, randomly deleting stored user files.
(C) Accumulating dust directly increases electrical resistance and power consumption of CPU registers.

(D) Internal dust build-up corrupts system graphic drivers, changing the operating system user interface.

137. Consider the following hardware and software maintenance practices:

I. Updating the operating system to patch security vulnerabilities.
II. Defragmenting an SSD on a daily basis to improve speed.
III. Ensuring the cooling vents of a laptop are not blocked.
IV. Regularly backing up important data to an external drive or cloud.

Which of the above statement(s) is/are correct?

(A) I, II, and III
(B) I, III, and IV
(C) II, III, and IV
(D) I, II, III, and IV

138. In computer terminology, if a hardware device is "hot-swappable" (like a USB pen drive), it means:

(A) The device generates extremely high thermal heat while actively transferring data files.
(B) It can be plugged and unplugged while system power is on.
(C) The device must be physically plugged into the motherboard prior to starting the boot process.
(D) The device requires a dedicated external cooling fan unit in order to safely function.

139. By what other common name is a computer's Motherboard known?

(A) System Board
(B) Arithmetic Board
(C) Network Interface Card
(D) Control Unit Board

140. In computer terminology, what is a "peripheral device"?

(A) The primary computational processing core located physically inside the central processing unit.
(B) The low-level internal operating system software that manages basic system startup operations.
(C) An auxiliary device attached to expand system functionality.
(D) The primary electrical power supply cable that connects the personal computer to a wall outlet.

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ANSWERS

1. (A) The physical, tangible components of a computer system
Computer hardware encompasses all physical and tangible parts of a computing device that can be touched and manipulated. These components include internal machinery such as microprocessors, memory modules, circuit boards, and secondary storage units, alongside external peripheral devices like keyboards, monitors, and mice. Together, these physical structures execute software programs and process data effectively.

2. (C) To provide a set of instructions that tells the hardware what to do
Software functions as a comprehensive set of non-tangible instructions, scripts, and programs that direct computing hardware to execute specific tasks. Hardware components lack independent intelligence and rely entirely on software code to govern internal logic, control input and output operations, process calculations, and coordinate data communication throughout the whole personal computer architecture.

3. (A) Microprocessor
A microprocessor is a physical semiconductor integrated circuit chip installed on the motherboard that acts as the central processing unit. Because it consists of tangible electrical circuits, transistors, and physical pins, it is categorized as hardware. Operating systems, device drivers, and web browsers represent intangible programmed instructions, which are classified as software components.

4. (A) P-2, Q-4, R-1, S-3
The motherboard is the primary printed circuit board representing physical hardware. Windows 11 functions as an operating system, categorizing it as system software. Microsoft Word provides productivity tools directly to end users, classifying it as application software. A hard disk provides non-volatile long-term data retention, making it a dedicated primary secondary storage device.

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5. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Computer hardware comprises physical electronic components that cannot perform meaningful operations independently. Software supplies the necessary logical instructions, algorithms, and code required to direct hardware behavior. Because physical machinery depends completely on programmed instructions to operate, the provided explanation accurately justifies why hardware cannot function without appropriate system and application software.

6. (A) Only I
Hardware consists of physical mechanical and electronic components subject to wear, friction, and thermal degradation over time. Software consists of intangible digital code that does not experience physical deterioration. Software is virtual rather than touchable, and computer viruses specifically target programmed software code rather than directly destroying physical hardware circuits.

7. (D) It is an intangible set of instructions or programs.
Software is defined by its intangible nature, consisting of digital instructions, routines, algorithms, and programs stored electronically in memory. Unlike physical hardware, software cannot be touched physically. It instructs the computer hardware on how to perform operations, manage data, execute calculations, and display user interfaces across diverse personal computer environments.

8. (A) System Software
System software, primarily including the operating system, acts as an intermediary bridge connecting human users to physical computer hardware. It translates high-level user commands into low-level machine instructions that hardware components understand. By managing system resources and hardware interfaces, system software provides a usable platform for operating applications and interacting with devices.

9. (B) Solid State Drive
A Solid State Drive is a physical hardware device that uses flash memory chips to store digital data permanently. Microsoft Excel, the Linux kernel, and antivirus programs are intangible sets of instructions, routines, and electronic code, which places them firmly in the software category rather than physical hardware components.

10. (B) Compiler
Keyboards, monitors, and printers represent physical, tangible hardware devices used for system input, visual display, and printed output, respectively. Conversely, a compiler is a specialized software utility that translates high-level programming code into machine language. Thus, the compiler belongs to the software category, contrasting with the remaining physical hardware options.

11. (A) Central Processing Unit
The acronym CPU stands for Central Processing Unit. It is the primary electronic component responsible for interpreting, executing, and processing instructions within a computer system. Often referred to as the processor, the CPU executes arithmetic calculations, logical evaluations, and system control operations required to run system software and application programs.

12. (C) Central Processing Unit
The Central Processing Unit is widely recognized as the brain of the computer system because it performs data processing, executes program instructions, and manages basic logical and arithmetic operations. Much like the human brain, the CPU receives input signals, processes information according to encoded instructions, and produces output while controlling connected components.

13. (D) To perform arithmetic and logical operations
The Arithmetic Logic Unit is a primary internal component of the Central Processing Unit. Its fundamental purpose is executing mathematical calculations such as addition, subtraction, multiplication, and division, along with logical operations including comparison, decision-making, and boolean evaluations. All digital data processing depends heavily on these core ALU functional operations.

14. (C) Control Unit (CU)
The Control Unit functions as the internal manager of the processor. It fetches instructions from main memory, decodes them, and directs the movement of data signals throughout the processor and attached components. While it does not process mathematical computations itself, it controls and synchronizes operations across the arithmetic unit, registers, and memory.

15. (B) High-speed storage locations inside the CPU for temporary data
Registers are small, ultra-fast internal memory locations built directly within the processor architecture. They temporarily hold instructions, intermediate calculation results, and memory addresses currently being processed by the arithmetic unit and control unit. Because they operate at processor speed, registers provide the fastest data access mechanism in computing systems.

16. (D) CPU Registers
Internal CPU registers represent the fastest memory tier within the computer hierarchy. Located directly on the processor chip alongside computation circuits, registers operate at the same speed as the processor clock. This proximity eliminates bus transmission delays, allowing immediate retrieval and storage of active data during arithmetic and logical execution.

17. (B) I, II, and IV
The ALU executes addition, subtraction, and logical operations, while the Control Unit manages internal data movement. Processor operations generate heat, making cooling mechanisms essential. Registers represent the fastest memory tier rather than the slowest, which makes statement III incorrect while statements I, II, and IV remain entirely factual and accurate.

18. (C) The main circuit board connecting all hardware components
The motherboard is the primary printed circuit board within a computer system. It establishes physical and electrical connections between core components, including the processor, main memory, expansion cards, and secondary storage units. By hosting internal buses and power distribution paths, the motherboard enables seamless hardware communication across the entire device.

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19. (A) In a dedicated motherboard socket
The Central Processing Unit is installed directly into a specialized CPU socket located on the main system motherboard. This socket provides electrical contacts connecting processor pins to system buses, power pathways, and memory controllers. Mounting the processor on the motherboard ensures rapid communication with primary memory and surrounding high-speed physical architecture.

20. (A) P-4, Q-2, R-3, S-1
The Arithmetic Logic Unit executes logical operations like AND and OR. The Control Unit decodes incoming instructions and generates system control signals. Registers hold temporary data during active program execution. The system clock emits continuous timing pulses that synchronize and coordinate computational operations across all internal computer hardware components.

21. (B) Arithmetic Logic Unit
Comparing two numeric values to evaluate relational conditions, such as determining if one number exceeds another, is a fundamental logical comparison task. The Arithmetic Logic Unit contains specialized circuitry designed for numerical operations and relational evaluations, enabling the processor to perform conditional branching and comparison algorithms efficiently.

22. (C) Control Unit
Fetching program instructions from primary system memory and decoding them to decipher their exact operational meaning is the direct responsibility of the Control Unit. After decoding the instruction, the Control Unit issues execution signals to other internal functional areas, ensuring computational tasks proceed in an orderly, properly synchronized sequence.

23. (D) Program Counter (PC)
The Program Counter is a specialized processor register that continuously stores the memory address of the next instruction scheduled for execution. Once the current instruction is fetched, the Program Counter increments its stored address value automatically, keeping program execution flowing sequentially through memory unless altered by jump or branch instructions.

24. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Internal CPU registers achieve higher access speeds than main RAM memory because they are physically integrated into the processor silicon itself. This eliminates electrical delay associated with transferring data across external system buses. Consequently, the physical location of registers inside the CPU directly explains their superior operational processing speed.

25. (B) Video Graphics Array
The fundamental internal structure of a Central Processing Unit consists of the Arithmetic Logic Unit, the Control Unit, and internal registers. Video Graphics Array refers to a display interface standard or graphics hardware technology used for video output, which is not an internal structural sub-unit of the processor core.

26. (B) Random Access Memory
RAM stands for Random Access Memory. It serves as the primary workspace for a computer system, allowing data to be read from and written to any memory location in equal amounts of time regardless of physical position. This capability enables rapid data retrieval for active applications and background processes.

27. (A) Memory that loses its data when the power is turned off
Volatile memory is characterized by its temporary storage behavior, requiring continuous electrical power to maintain stored digital information. As soon as electrical power is disconnected or interrupted, all data currently held within volatile memory components, such as standard system RAM, is immediately erased and permanently lost.

28. (C) Read Only Memory (ROM)
Read Only Memory is classified as non-volatile memory because it permanently retains stored instructions even when electrical power is disconnected. In contrast, Dynamic RAM, Static RAM, and high-speed CPU cache memory rely on constant electrical current, making them volatile storage technologies that lose contents upon power termination.

29. (D) Read Only Memory
ROM stands for Read Only Memory. It refers to non-volatile semiconductor memory prewritten with essential computer instructions during or

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after manufacturing. Under standard operation, the stored data can be read quickly by the system processor but cannot be modified or overwritten during routine software processing operations.

30. (C) RAM is read-and-write memory, whereas standard ROM is typically read-only.
RAM is read-and-write memory used to store dynamic data during system operations, losing its contents when powered off. Standard ROM is prewritten non-volatile memory that retains permanently stored startup instructions and allows data to be read but generally not written or altered during normal computer usage.

31. (B) RAM
RAM is classified as primary memory because it connects directly to the processor via high-speed system buses, serving as immediate working storage for active executing programs. Hard disk drives, solid state drives, and USB pen drives serve as secondary storage devices used for long-term non-volatile data storage.

32. (B) Only I and III
Primary memory connects directly to the CPU and operates at significantly higher access speeds than secondary storage media. However, primary memory has smaller storage capacity compared to secondary storage units like hard drives. Therefore, statements I and III are factual and correct, whereas statement II is incorrect.

33. (A) To store data permanently for future use
Secondary memory is required because primary system memory like RAM is volatile and limited in capacity. Secondary storage devices, including hard drives and solid state disks, provide non-volatile, large-capacity retention of operating system files, user documents, and application software even when system electrical power is completely switched off.

34. (C) In the ROM
Booting programs such as the BIOS or UEFI are permanently stored in Read Only Memory chips located on the motherboard. Because ROM is non-volatile, these essential startup routines remain intact when power is off, enabling the system to initialize hardware and boot the operating system upon power restoration.

35. (A) P-2, Q-4, R-3, S-1
RAM functions as volatile main memory for active computations. ROM is non-volatile memory storing permanent startup instructions. Cache memory acts as a high-speed buffer positioned between the processor and RAM. The hard disk offers high-capacity secondary storage designed for persistent, long-term user file and program retention.

36. (D) Hard Disk Drive
A Hard Disk Drive is classified as secondary memory because it provides persistent, high-capacity, non-volatile storage that stores data independently of the CPU. RAM and cache memory serve as primary memory components, whereas the system motherboard acts as the main interconnecting circuit board rather than secondary memory.

37. (B) DRAM (Dynamic RAM)
Dynamic RAM uses tiny integrated capacitors to store digital charge bits representing memory state. Because capacitors gradually leak charge over time, DRAM requires continuous electrical refreshing hundreds of times per second to prevent data corruption. Static RAM uses transistor flip-flops and retains data without periodic refresh cycles.

38. (C) Erasable Programmable Read Only Memory
EPROM stands for Erasable Programmable Read Only Memory. It represents a type of non-volatile semiconductor memory that retains data when power is removed, but can be erased by exposing the memory chip to intense ultraviolet light before being reprogrammed with new digital instruction sets.

39. (D) RAM
Active unsaved files reside temporarily within Random Access Memory while being modified. Because RAM is volatile memory that depends on continuous electrical power, a sudden power loss instantly clears memory contents. Unsaved document text is lost because it was not yet copied to non-volatile secondary storage like a hard drive.

40. (A) Basic Input Output System
BIOS stands for Basic Input Output System. It is firmware stored in non-volatile ROM on the motherboard that executes initial hardware diagnostics during startup. BIOS initializes key hardware components, tests system memory, and locates the operating system bootloader to

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initiate complete personal computer system boot sequences.

41. (B) Primary memory is faster and more expensive per byte.
Primary memory components, such as system RAM, offer exceptionally fast data access rates to support real-time CPU operations, making them costlier per gigabyte of storage. Secondary memory, such as magnetic hard disks, provides larger capacity at significantly lower costs per byte, albeit operating at slower processing access speeds.

42. (B) Read Only Memory
Firmware consists of permanent low-level software embedded into physical hardware components. It is stored inside Read Only Memory or flash memory chips located directly on hardware devices. Storing firmware in non-volatile ROM ensures low-level control code remains available instantly upon startup to operate device hardware circuits correctly.

43. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Hard disk drives provide stable long-term storage because they are non-volatile and retain information without power. Conversely, RAM loses all stored data when power stops. Because volatile RAM cannot preserve data permanently, non-volatile storage devices like hard disks are required for long-term file retention, making the explanation correct.

44. (C) RAM
Before the Central Processing Unit can execute instructions or manipulate data stored on secondary storage media, the information must first be loaded directly into primary system RAM memory. The CPU interacts directly with system RAM to achieve fast access speeds required during active software and program execution.

45. (D) Solid State Drive
A Solid State Drive is categorized as secondary storage media, providing long-term non-volatile data retention via integrated flash memory circuits. Conversely, internal CPU registers, high-speed cache memory, and primary system RAM all belong to primary memory hierarchy tiers that are directly involved in active processor data execution operations.

46. (C) Magnetic storage technology
Traditional Hard Disk Drives utilize magnetic storage technology to retain digital information. Data is written onto rapidly spinning rigid platters coated with magnetic material using electromagnetic read-write heads. Magnetized iron particles represent binary bits, providing persistent, high-capacity secondary storage across desktop and server computing platforms.

47. (B) Solid State Drive
SSD stands for Solid State Drive. It is a modern non-volatile secondary storage device that uses integrated flash memory assemblies to store data persistently. Unlike traditional hard disk drives, solid state drives contain no moving mechanical parts, delivering enhanced reliability and significantly faster data transfer performance.

48. (D) SSDs offer faster read/write speeds using flash memory.
Solid State Drives utilize flash memory integrated circuits to store binary data electronically without physical movement. This architecture enables significantly faster data access times, higher read and write throughput speeds, lower latency, and greater physical durability compared to mechanical magnetic hard drives with moving read-write heads.

49. (A) Compact Disk
The acronym CD stands for Compact Disk. It is an optical secondary storage medium designed to store digital data, audio recordings, and software programs. Information is encoded onto a reflective plastic disk using microscopic pits and read using a laser beam inside an optical disk drive.

50. (C) Optical (Laser)
CD and DVD drives rely on optical laser technology to read and record data. Low-power semiconductor laser beams illuminate microscopic physical pits and flat lands embedded on the reflective surface of the rotating disk. Photo sensors detect reflected light patterns, translating physical optical variations back into binary digital signals.

51. (B) I, II, and IV
Pen drives utilize flash memory technology, SSDs contain zero moving mechanical parts, and DVDs offer greater capacity than standard CDs. Traditional hard drives rely on magnetic heads

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rather than optical lasers, making statement III incorrect while statements I, II, and IV are accurate descriptions of secondary storage.

52. (D) USB port
A USB pen drive connects to computers through a standard Universal Serial Bus port. USB interfaces supply electrical operating power while facilitating rapid, hot-swappable data transfers between portable flash storage media and system memory. VGA and HDMI ports transmit video signals, while audio jacks handle sound signals.

53. (B) Pen Drive
A USB pen drive relies on semiconductor flash memory technology to retain digital information persistently. Magnetic tapes and hard disk drives use magnetic surface media, whereas optical CD-ROMs rely on reflective laser discs. Consequently, the pen drive serves as a direct example of solid-state flash memory storage.

54. (C) 4.7 GB
A standard single-sided, single-layer Digital Versatile Disc offers a baseline storage capacity of 4.7 Gigabytes. This optical format achieves higher storage density than standard 700 Megabyte Compact Disks by using tighter laser track spacing and shorter wavelength red lasers to encode digital video and software data.

55. (A) 700 MB
A standard CD-R disc features an optical storage capacity of approximately 700 Megabytes of digital data, or about 80 minutes of uncompressed audio recording. This standard capacity was established to accommodate digital audio tracks and personal computer software files using standard spiral optical track recording density.

56. (A) Hard Disk
A Hard Disk is a magnetic storage device that records digital data onto rotating magnetic platters using electromagnetic read-write heads. CD-ROM, DVD, and Blu-ray disks all represent optical storage technologies that use focused laser beams to read and write digital information stored on reflective disc surfaces.

57. (B) Platters
The rigid, circular rotating disks inside a Hard Disk Drive are known as platters. Manufactured from aluminum alloy or glass and coated with thin magnetic layers, platters spin rapidly on a central spindle while electromagnetic read-write heads hover above their surfaces to read and record digital binary data.

58. (B) Magnetic Tape
Magnetic tape is a sequential access storage medium. To read or write a specific data block, the tape must physically rewind or fast-forward through preceding record tracks sequentially. In contrast, hard disks, solid state drives, and optical DVDs allow direct random access to arbitrary memory locations.

59. (A) Direct Access
Hard disks and solid state drives function as direct access storage devices. They access data at any arbitrary memory address nearly instantaneously without processing through intermediate stored files sequentially. Direct access mechanisms enable rapid read and write speeds vital for modern high-performance desktop computing and operating system activities.

60. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Modern laptops predominantly feature solid state drives instead of traditional mechanical hard drives. SSDs offer faster operational speeds, lower power draw, and superior shock resistance due to the absence of delicate moving parts. These inherent performance advantages directly explain why SSD technology has replaced HDDs in portable computer design.

61. (D) USB Pen Drive
A USB pen drive is renowned for its extreme portability, lightweight design, and convenient plug-and-play operation. Using flash memory, it connects directly into standard USB ports without requiring specialized installation tools or internal chassis mounting, making it ideal for transferring personal files between separate computing devices.

62. (A) P-3, Q-2, R-4, S-1
Hard disk drives utilize direct magnetic platters. Optical discs like CDs and DVDs rely on laser optical sensing. Solid state drives store digital data using non-volatile semiconductor flash memory. Magnetic tape media record data sequentially along continuous magnetic strips, matching each storage device to its core technical storage mechanism.

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63. (B) Compact Disk Read Only Memory
CD-ROM stands for Compact Disk Read Only Memory. It refers to a pre-pressed optical disc containing stored digital data that can be accessed and read by optical drive lasers, but cannot be modified, overwritten, or erased by end users under standard operational personal computer software conditions.

64. (D) Static RAM
Pen drives, SD cards, and solid state drives are non-volatile secondary storage media designed for persistent long-term data retention. Static RAM is a primary memory technology that is volatile, requiring continuous electrical current to retain active temporary computational data, making it distinct from the secondary storage devices.

65. (A) Solid State Drive
A Solid State Drive contains no moving physical components, relying entirely on static flash memory integrated circuits for digital data storage. Conversely, traditional mechanical hard drives, CD-ROM drives, and floppy disk drives depend on motors, spinning media surfaces, and movable read-write mechanisms, making them susceptible to mechanical wear.

66. (C) Between the CPU and Main Memory (RAM)
Cache memory is physically positioned between the Central Processing Unit and primary system RAM. This high-speed memory buffer stores frequently accessed program instructions and active data, minimizing processing delays caused by slower main memory bus transfers and accelerating overall execution performance within personal computing architectures.

67. (A) To store frequently used data and instructions for rapid CPU access
The primary purpose of cache memory is holding frequently requested instructions and active data close to the processor core. By serving requested data directly from high-speed cache rather than slower primary RAM, cache memory reduces processor wait cycles, drastically accelerating overall instruction throughput and computing efficiency.

68. (A) II, IV, III, I
Memory access speed is highest in CPU registers, which operate at processor clock speeds. Cache memory ranks second, followed by main RAM memory. Magnetic hard disks represent the slowest memory tier due to mechanical latency, establishing the sequence from fastest to slowest as registers, cache, RAM, and hard disk.

69. (B) Bit
A bit, short for binary digit, is the fundamental and smallest unit of storage measurement in computer systems. Represented mathematically by either a 0 or a 1, bits form the binary foundation upon which all complex digital processing, data encoding, and computational memory structures are built.

70. (B) 4
A nibble consists of exactly 4 binary bits. It represents half of a standard 8-bit byte. In computing, nibbles are commonly used to represent single hexadecimal digits, which require four binary bits to express values ranging from decimal zero through fifteen in digital processing systems.

71. (B) 8
A standard byte consists of exactly 8 individual binary bits. Bytes represent the basic addressable unit of measurement for computer memory and file storage, capable of encoding a single character, text symbol, or number using standard digital coding schemes such as ASCII or Unicode.

72. (B) 1024 Bytes
In computer binary architecture, 1 Kilobyte equals exactly 1024 Bytes, calculated as 2 to the 10th power. Although decimal measurement standards approximate a thousand bytes, digital computing relies on binary powers of two, making 1024 the precise byte count for standard binary memory measurement units.

73. (C) Byte, KB, MB, GB, TB
Digital memory units increase in scale by binary powers of two. The correct ascending sequence begins with the fundamental Byte, followed sequentially by Kilobyte, Megabyte, Gigabyte, and Terabyte. Each step in this sequence represents a factor of 1024 relative to the preceding memory measurement unit.

74. (A) 1024 Kilobytes (KB)
In standard binary digital storage hierarchy, 1 Megabyte is equal to exactly 1024 Kilobytes. Memory units scale in multiples of 1024, meaning that 1024 Bytes make 1 Kilobyte, and 1024

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Kilobytes combine to form 1 Megabyte within standard personal computer system storage configurations.

75. (A) Only I and II
A bit stores either binary 0 or 1, and 8 bits combine to form 1 Byte. However, 1 Terabyte equals 1024 Gigabytes rather than 1024 Megabytes. Therefore, statements I and II are factual and correct, whereas statement III is mathematically incorrect regarding memory measurement unit conversion scales.

76. (B) 1024 Megabytes (MB)
In standard binary computer storage hierarchy, 1 Gigabyte equals exactly 1024 Megabytes. As memory capacity scales upward, each larger unit is composed of 1024 units of the immediately preceding measurement tier, establishing the official conversion standard from Megabytes to Gigabytes in digital processing environments.

77. (C) 1024 Gigabytes (GB)
In standard computer memory measurements, 1 Terabyte equals exactly 1024 Gigabytes. Standard digital storage capacity follows exponential powers of two, where 1024 Gigabytes combine directly to define one Terabyte of non-volatile secondary storage capacity across desktop hard drives, network systems, and server media.

78. (C) Nibble
A nibble is the official computing term used to describe half of a standard 8-bit byte. Composed of exactly 4 binary bits, a nibble can represent up to sixteen distinct binary states, corresponding to a single hexadecimal digit in digital computing systems and computer arithmetic logic.

79. (B) It is volatile and loses contents when power is off.
Cache memory is constructed using Static Random Access Memory, which is volatile. Like primary dynamic system RAM, cache memory relies on uninterrupted electrical power to sustain stored binary data states. When electrical power is switched off or interrupted, all temporary instructions stored within cache memory are instantly lost.

80. (B) File C, File A, File B, File D
Converting file sizes into Megabytes shows File C (2000 KB) is roughly 1.95 MB, File A is 500 MB, File B (1 GB) is 1024 MB, and File D (2 TB) is roughly 2,097,152 MB. Arranging them in ascending capacity yields File C, File A, File B, and File D.

81. (A) System Software
Operating systems like Windows and Linux represent system software because they manage underlying hardware components, allocate primary system memory, coordinate processing resources, and establish a foundational platform for running application software. They operate closely with hardware rather than fulfilling specialized end-user tasks directly.

82. (C) To manage hardware resources and support other software
The primary purpose of system software is managing hardware resources, including CPU timing, memory allocation, and peripheral access, while providing a stable execution environment for user applications. System software acts as an operational foundation, insulating user software from direct hardware complexities and ensuring efficient computing operations.

83. (A) Application Software
Application software includes programs designed to fulfill specific user tasks, such as word processing, graphic editing, spreadsheet calculation, or web browsing. Unlike system software, which manages underlying computer hardware resources, application software interacts directly with end users to carry out productivity tasks and specialized computational workflows.

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84. (D) Microsoft Word
Microsoft Word is application software designed to help end users create, format, and edit document files directly. Operating systems like Windows 10 and Android OS, alongside hardware device drivers, function as system software that manages hardware resources and provides execution environments for applications like Microsoft Word.

85. (B) Linux
Linux is an operating system kernel that serves as system software, managing system memory, processor allocation, and peripheral communications. Adobe Photoshop, VLC Media Player, and Microsoft Excel represent application software packages built to carry out specific end-user tasks rather than manage fundamental computer hardware operations directly.

86. (B) I, II, and IV
System software manages hardware resources and provides a base for application software, while the operating system represents the most vital system software. MS PowerPoint is an application software used for presentations rather than system software, making statement III incorrect while statements I, II, and IV are accurate.

87. (D) To analyze, configure, optimize, and maintain a computer
Utility software consists of specialized system management programs designed to analyze, configure, optimize, and maintain computer systems. Tools like disk defragmenters, file compression utilities, and cleanup tools support overall system performance, ensure storage integrity, and protect system software without performing end-user productivity application work.

88. (A) Antivirus Program
An antivirus program is classified as utility software because it performs system maintenance and security tasks, analyzing drives to neutralize malware security threats. Microsoft Excel and Google Chrome function as application software for user productivity, while the Linux kernel serves as foundational operating system software.

89. (B) Disk Defragmenter
A disk defragmenter is a system utility that reorganizes fragmented file data stored across physical hard disk platters into contiguous sectors. Consolidating fragmented files reduces drive head movement, significantly speeding up file access rates, improving data read throughput, and maintaining peak secondary storage performance over time.

90. (B) Low-level software controlling specific hardware devices
Firmware consists of specialized low-level program code embedded permanently into hardware ROM or flash memory microcontrollers. It provides foundational control instructions needed by specific hardware components, such as keyboards, graphics cards, or optical drives, to operate reliably without needing immediate host operating system driver execution commands.

91. (A) In motherboard ROM or Flash memory
System firmware like BIOS or UEFI is stored inside non-volatile Read Only Memory or flash memory chips located directly on the main system motherboard. Non-volatile storage guarantees that startup firmware code remains preserved when power is turned off, providing instant software boot routines upon system startup.

92. (C) To enable OS communication with specific hardware
A device driver is specialized system software that enables the operating system to communicate effectively with connected physical hardware components. Drivers translate generic operating system input and output requests into device-specific hardware commands, allowing printers, network cards, and graphics cards to operate properly as intended.

93. (D) System Software
Device drivers belong to the system software category because they function as essential software control bridges between the main operating system and physical hardware devices. Without device drivers, system software cannot properly manage attached hardware components like sound cards, network interfaces, or external printing equipment.

94. (A) P-3, Q-4, R-1, S-2
Windows 11 operates as a primary desktop operating system. MS PowerPoint provides slide presentation creation capabilities as application software. Disk Cleanup reorganizes storage drives as utility software. A printer driver acts as specialized system software, enabling seamless operating system communication with connected printing hardware devices.

95. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Connecting a newly acquired printer may not work immediately because the operating system requires an appropriate device driver to understand the printer's specific control commands. Because the system software requires a specialized translator driver to interface with hardware, the reason accurately explains the observed printer setup issue completely.

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96. (D) Operating System
The operating system manages primary system resource allocation, including RAM memory, CPU execution time, disk storage space, and peripheral input-output devices. By governing all hardware resource allocation, the operating system effectively prevents operational conflicts between running software applications, maintaining system stability across personal computing platforms.

97. (A) System software manages resources; Application software does user tasks.
The fundamental distinction between system software and application software lies in their distinct functional roles. System software manages internal computer hardware resources, memory, and peripheral hardware, establishing an operational infrastructure. Conversely, application software leverages that underlying system infrastructure to execute direct end-user productivity tasks effectively.

98. (C) Application Software
A word processor belongs to the application software category because it provides document creation, editing, and formatting tools directly to end users. Unlike system software that manages hardware resources, a word processor operates on top of the operating system to perform specific user productivity tasks, such as typing letters and composing text reports.

99. (A) Utility Software
Data backup software is classified as utility software because its primary purpose is maintaining, protecting, and optimizing computer system data integrity. Utility software focuses on supporting system health, storage backup, and security operations, contrasting sharply with application software focused on direct end-user content creation.

100. (D) Updating permanent instructions in its ROM or Flash memory
Updating the firmware of a hardware device involves rewriting its low-level embedded control instructions stored within non-volatile Read Only Memory or flash memory. These software updates fix operational bugs, improve hardware compatibility, update security protocols, and enhance performance without requiring physical replacement of internal hardware microcontrollers or circuit board components.

101. (B) Its source code is freely accessible to view, edit, and share.
Open-source software refers to computer programs whose human-readable source code is made publicly available under flexible licensing terms granting users explicit rights to inspect, modify, enhance, and redistribute the code. This collaborative software development model encourages open community sharing, peer review, and extensive software customization without commercial proprietary restrictions.

102. (C) Linux
Linux is a widely recognized open-source operating system whose kernel source code is freely accessible to inspect, modify, and distribute worldwide. Conversely, Microsoft Windows, Apple macOS, and mobile iOS represent proprietary closed-source operating systems whose internal source code remains strictly protected under corporate copyrights and commercial software licenses.

103. (D) Free software provided without access to its source code.
Freeware refers to fully copyrighted software distributed at zero monetary cost for end users. While users can download and utilize freeware software indefinitely without financial charges, the original developer retains underlying intellectual property rights and keeps the program source code closed, preventing public modification or code sharing.

104. (A) Software provided free on a trial basis, requiring payment for full features.
Shareware is a distribution software model where applications are provided free of charge on a temporary trial basis. Users evaluate product capabilities for a limited time, after which full features, ongoing support, or continued usage rights require purchasing a paid software license key from the commercial copyright owner.

105. (B) Freeware keeps source code hidden; Open-source makes source code available.
The key distinction between freeware and open-source software centers on source code availability. Freeware is distributed free of charge while keeping its underlying program source code strictly proprietary and hidden. Conversely, open-source software makes its full source code openly available for public inspection, modification, enhancement, and community development.

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106. (B) Proprietary Software
Proprietary software, or closed-source software, is owned by an individual or commercial entity that restricts legal rights to view, modify, or share its internal source code. Users acquire licensing rights to operate executable software binaries while original source code ownership remains strictly protected under intellectual property laws.

107. (A) Only I and II
Shareware offers trial usage before purchase, while freeware provides free usage while retaining author copyright. Open-source software licenses frequently permit commercial usage alongside public source code distribution. Thus, statements I and II represent correct statements, whereas statement III is incorrect regarding standard open-source software licensing guidelines.

108. (C) Shareware
Shareware is a software distribution model where programs are made available with time-limited evaluation terms, commonly enforced as a 30-day trial period limit. This approach enables prospective users to test complete software capabilities before purchasing a commercial license key, encouraging informed purchasing decisions while protecting the software developer's financial rights.

109. (D) To define the legal terms and restrictions for software use.
A software license is a legal contract governing the use, installation, modification, and redistribution of digital software programs. It formally defines user permissions, system usage restrictions, liability limitations, and intellectual property rights established by the software author or commercial copyright holder, ensuring legal compliance when operating computing applications.

110. (C) A license granting usage rights under specified conditions.
When purchasing proprietary software like Microsoft Office, buyers acquire a non-exclusive license granting rights to run the application software under defined contractual terms. The buyer does not purchase legal ownership of underlying source code or software copyright, which remain the strictly protected property of the original software developer.

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111. (B) End User License Agreement
EULA stands for End User License Agreement. It is a legal contract established between a software publisher and the end user, detailing acceptable usage terms, installation rights, user restrictions, and copyright constraints associated with running the software application on modern personal computing hardware and mobile devices.

112. (D) Microsoft Windows 11
Microsoft Windows 11 is proprietary software whose source code is closed and strictly guarded by Microsoft Corporation. Conversely, Mozilla Firefox, VLC Media Player, and the Android operating system core are open-source software projects whose source code is publicly accessible for examination, user modification, and community distribution.

113. (A) Linux
The Android mobile operating system relies on a modified open-source Linux kernel. The underlying Linux kernel provides foundational system functions, including hardware device driver interfaces, low-level process management, memory allocation, and core system security structures required to manage touch interfaces and mobile software applications effectively.

114. (C) Open-source Licensing
Open-source licensing explicitly grants software developers legal rights to access, inspect, modify, and extend a program's original source code. This open licensing framework permits programmers to add new functional features, repair software bugs, and redistribute revised code distributions legally in accordance with open-source project software licenses.

115. (A) Proprietary Software
Microsoft Word is categorized as proprietary software because its underlying source code is owned, copyrighted, and kept strictly confidential by Microsoft Corporation. End users purchase software licenses granting rights to operate the application on their devices, without receiving legal authorization or access to view, edit, or modify source code files.

116. (D) Machine Language
Machine language consists entirely of binary sequences composed of zeros and ones, representing the lowest-level programming

language understood directly by the CPU. Because machine language directly matches internal processor digital logic circuits, instructions execute directly on hardware without requiring prior software translation, compilation, or interpretation steps.

117. (B) Assembly Language
Assembly language is a low-level programming language that replaces raw binary machine code with human-readable symbolic mnemonics, such as ADD, SUB, and MOV. While easier to read than machine code, assembly language maintains a direct correspondence with processor hardware instructions and requires translation via an assembler program.

118. (C) It is closer to human language and easier to write.
High-Level Languages like Python and Java use English-like syntax and abstract mathematical logic, making programs much easier for human developers to write, read, and maintain. They abstract away complex processor hardware details, providing portability across different operating platforms, though software translation into machine code is required before CPU execution.

119. (D) Compiler
A compiler is a language translator that processes the entire source code of a high-level program at once, translating it into executable machine code before program execution. This complete batch conversion generates an independent executable object file, facilitating rapid subsequent program execution speeds on physical computer hardware.

120. (A) Interpreter
An interpreter is a specialized software translator that processes high-level programming language source code line by line. It reads a single statement, translates it into machine code, and executes it immediately before proceeding to the next line, simplifying interactive software development, error identification, and real-time program debugging tasks.

121. (A) I, II, and III
Machine language is tied directly to specific CPU architectures. Assemblers translate assembly code, while compilers and interpreters convert high-level languages into binary machine code. Because CPUs require translated machine code for direct instruction execution, statement IV is incorrect while statements I, II, and III remain factual and accurate.

122. (B) Assembler
An assembler is a specialized system software translator that converts symbolic assembly language mnemonics into binary machine language instructions. By translating symbolic instruction names and target memory addresses into binary code, the assembler allows low-level assembly programs to execute directly on specific processor hardware architecture.

123. (A) Python
Python is a high-level programming language featuring readable English-like syntax, automatic memory management, and high abstraction from hardware details. Conversely, binary code and x86 assembly represent low-level programming languages, while internal CPU microcode represents basic hardware control logic embedded directly inside physical processor hardware chips.

124. (C) Because code for one CPU architecture may not run on another.
Machine language is hardware-dependent because its binary instructions directly mirror the internal register architecture, bus structures, and instruction sets of a specific processor family. Consequently, binary machine code compiled for one central processing unit architecture will not execute properly on a processor featuring a different underlying hardware design.

125. (D) Interpreter
An interpreter translates and executes high-level source code line by line. When it encounters a syntax error, translation halts immediately, reporting the error alongside the precise line location. This line-by-line evaluation contrasts sharply with compilers, which analyze complete source code files prior to issuing combined error logs.

126. (C) To convert incoming AC power into DC power for internal parts.
The primary function of a computer Power Supply Unit is converting high-voltage Alternating Current from electrical wall outlets into regulated, low-voltage Direct Current power. It supplies steady DC voltages required by internal hardware components, including the

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main motherboard, processor, memory modules, and internal storage drives.

127. (B) Switched Mode Power Supply
SMPS stands for Switched Mode Power Supply. It is an efficient power conversion unit that uses high-frequency switching regulators to convert incoming AC power into regulated DC voltages required by computer hardware, offering a compact design, low thermal heat output, and stable voltage delivery within personal computers.

128. (D) To dissipate processor heat and prevent system overheating.
High-speed CPU microprocessors generate substantial thermal heat during intense operational processing. A dedicated cooling fan, mounted atop a metal thermal heatsink, draws heat away from the processor chip surface. Continuous heat dissipation prevents electrical component degradation, thermal throttling, and severe hardware failures caused by unmanaged operational overheating.

129. (A) Universal Serial Bus
USB stands for Universal Serial Bus. It is an industry-standard interface designed to establish standardized cable connections between personal computers and peripheral hardware devices, handling high-speed digital data transmission and electrical power delivery across keyboards, mice, storage drives, printers, and modern smart mobile devices effectively.

130. (C) High-Definition Multimedia Interface
HDMI stands for High-Definition Multimedia Interface. It represents an all-digital audio and video cable interface standard designed to transmit uncompressed digital video signals alongside multi-channel digital audio from source computer devices to modern high-resolution display monitors, digital projectors, and television screens seamlessly.

131. (A) High-definition video and digital audio
An HDMI interface transmits both uncompressed high-definition video and multi-channel digital audio signals over a single cable connection. Combining both video and audio channels simplifies cable connectivity between personal computers, media players, display monitors, and digital televisions, replacing legacy multi-cable analog video and audio connections completely.

132. (D) A computer monitor
A Video Graphics Array port is an analog video interface historically used to connect computer systems to display monitors and video projectors. It utilizes a 15-pin connector to output analog RGB video signals to external display equipment, preceding modern high-definition digital interfaces like HDMI and DisplayPort technology.

133. (B) Only I and III
USB ports supply electrical power to attached peripherals, and HDMI is a digital video and audio interface. VGA carries analog video signals without audio support. Therefore, statements I and III are factual and accurate, whereas statement II is incorrect regarding standard VGA signal capabilities and transmission formats.

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134. (C) The OS automatically detects and sets up the device.
Plug and Play capability associated with USB interfaces allows the operating system to automatically recognize, configure, and assign system drivers to a newly connected peripheral device. This automated system configuration eliminates manual driver installation or complex hardware setting adjustments by end users prior to immediate device operation.

135. (D) Disk cleanup and virus scanning
Disk cleanup and regular virus scanning represent fundamental software maintenance practices that maintain storage efficiency, optimize file organization, and preserve overall system security. Physical maintenance tasks like wiping monitor screens or replacing internal motherboard circuit boards represent hardware maintenance rather than routine software optimization routines.

136. (A) Dust blocks cooling fans, causing system overheating.
Dust accumulation on internal computer components blocks air vents and coats cooling fan blades, significantly reducing heat dissipation efficiency. Insufficient internal airflow leads to dangerous thermal buildup, triggering processor throttling, operational instability, or physical hardware damage, making periodic dust removal essential for reliable system maintenance operations.

137. (B) I, III, and IV
Updating system software patches security flaws, keeping cooling vents clear prevents system overheating, and backing up data protects against data loss. Daily SSD defragmentation is unnecessary and degrades flash memory lifespan, making statement II incorrect while statements I, III, and IV represent proper system maintenance practices.

138. (B) It can be plugged and unplugged while system power is on.
A hot-swappable hardware device, such as a USB pen drive, can be physically connected or disconnected from a computer system while electrical system power remains active. System drivers configure or unmount hot-swappable devices dynamically without requiring a full system power shutdown or complete system reboot cycle.

139. (A) System Board
The computer motherboard is commonly referred to as the system board or mainboard. It serves as the central printed circuit board that interconnects the CPU, system memory, expansion cards, and input-output peripheral ports, establishing essential electrical communication pathways throughout the entire personal computer system architecture.

140. (C) An auxiliary device attached to expand system functionality.
A peripheral device is an auxiliary hardware unit connected externally or internally to a computer system to expand system functionality. Examples include keyboards, mice, printers, scanners, and external drives, which interact with the system through input, output, or storage operations without forming part of the core CPU architecture.

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CHAPTER 05
Input and Output Devices

1. Which of the following best defines an input device in a computer system?
(A) A device that processes data and produces the final result
(B) A hardware component used to send data and control signals to the computer
(C) A device that displays the processed information to the user
(D) A software program that manages internal memory

2. What is the primary function of an output device?
(A) To enter raw data into the computer
(B) To store data permanently for future use
(C) To regulate the flow of electricity to the motherboard
(D) To convert machine-readable information into a human-readable form

3. Which of the following accurately describes the main difference between input and output devices?
(A) Input devices translate human commands to machine language, while output devices translate machine language to human-understandable form
(B) Input devices only handle text, while output devices only handle graphics
(C) Input devices are always wireless, whereas output devices must be wired
(D) Input devices are used for storage, while output devices are used for processing

4. Consider the following statements regarding input and output devices:
I. A keyboard is purely an input device.
II. A monitor without touch capability is purely an output device.
III. Output devices are responsible for converting analog signals into human speech only.
IV. Input devices cannot store data permanently.
Which of the above statement(s) is/are correct?
(A) I, II and III
(B) II, III and IV
(C) I, II and IV
(D) I, III and IV

5. Which of the following is not an example of an input device?
(A) Plotter
(B) Barcode Reader
(C) Optical Mark Reader (OMR)
(D) Light Pen

6. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): A scanner is considered an input device.
Reason (R): A scanner reads printed text and images and translates them into a digital format for the computer to process.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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7. What is the standard layout of most English language computer keyboards called?
(A) AZERTY
(B) QWERTY
(C) DVORAK
(D) ASDFGH

8. How many function keys are generally present on a standard Windows computer keyboard?
(A) 10
(B) 12
(C) 14
(D) 15

9. Keys such as Shift, Ctrl, and Alt are classified as which type of keys?
(A) Toggle keys
(B) Function keys
(C) Navigation keys
(D) Modifier keys

10. Which key on a standard keyboard is used to turn the numeric keypad on and off?

(A) Num Lock
(B) Scroll Lock
(C) Caps Lock
(D) Insert

11. Which of the following is an example of a toggle key on a keyboard?
(A) Enter
(B) Caps Lock
(C) Spacebar
(D) Escape (Esc)

12. Find the odd one out among the following keyboard keys.
(A) F1
(B) Ctrl
(C) F5
(D) F12

13. Which technology is most commonly used in modern computer mice to track movement?
(A) Optical sensor module
(B) Mechanical track ball
(C) Magnetic field sensor
(D) Acoustic wave tracer

14. Who is credited with the invention of the computer mouse?
(A) Charles Babbage
(B) Alan Turing
(C) Douglas Engelbart
(D) Tim Berners-Lee

15. In standard mouse operation, what is the primary function of double-clicking the left mouse button on a file icon?
(A) To rename the file
(B) To delete the file
(C) To show the file's properties
(D) To open or execute the file

16. Match the mouse actions in List I with their general results in List II.
List I: (Mouse Action)
P. Single left click
Q. Double left click
R. Right click
S. Click and drag
List II: (Result)
1. Opens a context menu
2. Selects an item
3. Moves an item to a new location
4. Opens an application or file
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-2, Q-3, R-1, S-4

17. Consider the following statements about a computer mouse:
Statement I: A trackball mouse requires the user to physically slide the entire mouse across the desk.
Statement II: A scroll wheel on a mouse is primarily used to move up and down through a document or web page.
Which of the following statements is correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

18. What is the primary function of a scanner?
(A) To convert digital files into printed paper documents
(B) To project graphical display output onto a large screen
(C) To extract data stored in magnetic strips on credit cards
(D) To convert physical documents into digital formats

19. What does the abbreviation OCR stand for in the context of scanning technology?
(A) Optical Character Recognition
(B) Output Control Register System
(C) Online Character Rendering Engine
(D) Optical Central Processing Routing

20. Which type of scanner is most commonly used for home and office tasks to scan standard A4 documents?
(A) Drum scanner
(B) Handheld scanner
(C) Flatbed scanner
(D) Barcode scanner

21. Which input device is predominantly used to evaluate multiple-choice question examination sheets?
(A) OMR
(B) MICR
(C) OCR
(D) Barcode Reader

22. A joystick is primarily classified as which type of device?
(A) Primary output display device
(B) Secondary data storage device
(C) Wireless network hardware device

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(D) Pointing input device

23. In which of the following applications is a joystick most frequently used?
(A) Typing text documents
(B) Flight simulators and gaming
(C) Scanning photographs
(D) Printing high-resolution graphics

24. How does a gamepad differ structurally from a traditional joystick?
(A) A gamepad utilizes a tall vertical joystick stick for directional movement, while a traditional joystick is laid completely flat across a table
(B) A gamepad functions exclusively as an audio output peripheral device, whereas a joystick serves as a primary manual data input peripheral
(C) A gamepad is held in both hands using thumb controls, while a joystick uses a single vertical stick
(D) A gamepad can only operate when attached directly to television displays, while a joystick is built exclusively for desktop computer systems

25. Which device is used to input audio into a computer system?
(A) Audio speaker
(B) Display monitor
(C) Video projector
(D) Microphone

26. What is the main purpose of a webcam?
(A) To capture live video and images for the computer
(B) To project videos onto a wall
(C) To edit video files internally
(D) To increase the graphical processing power of the computer

27. Consider the following statements regarding multimedia input devices:
I. A microphone converts sound waves into digital audio signals.
II. A webcam can be used for video conferencing.
III. Both a microphone and a webcam are output devices.
Which of the above statement(s) is/are correct?
(A) II and III only
(B) I and II only
(C) I and III only
(D) I, II and III

28. What does the abbreviation MICR stand for, a technology widely used in the banking sector?
(A) Multiple Information Code Reader System
(B) Magnetic Ink Character Recognition
(C) Magnetic Image Computer Rendering Engine
(D) Main Input Character Routine Architecture

29. Where is MICR technology primarily applied?
(A) Reading numbers on bank cheques
(B) Checking student answers on marked OMR examination sheets
(C) Scanning digital QR codes inside mobile payment applications
(D) Translating spoken human voice into formatted text files

30. A stylus is best described as which of the following?
(A) A small specialized acoustic speaker component built into modern earpieces
(B) A high-speed portable storage device engineered specifically for digital art
(C) A pen-like device used to draw on touchscreens
(D) A high-speed monochrome or color desktop laser printing device

31. Which of the following devices acts as both an input and an output device simultaneously?
(A) Mechanical keyboard
(B) Desktop printer
(C) Flatbed scanner
(D) Touchscreen

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32. Which type of touchscreen requires the touch of a conductive object, such as a bare finger, to register input?
(A) Resistive touchscreen
(B) Surface Acoustic Wave touchscreen
(C) Capacitive touchscreen
(D) Infrared touchscreen

33. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): A graphics tablet requires a stylus to function optimally.
Reason (R): The stylus allows digital artists to draw with precision similar to a traditional pen and paper.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true

but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

34. What is the primary purpose of a fingerprint scanner?
(A) To capture high-resolution full-color digital photographs for archival storage
(B) To measure and evaluate the user's real-time typing speed and accuracy rate
(C) To scan printed physical text documents directly into a word processor file
(D) To authenticate individuals using unique biometric patterns

35. Which of the following is an example of a biometric input device?
(A) Iris scanner
(B) Barcode reader
(C) Optical mouse
(D) Touchpad

36. Select the correct sequence of events when a biometric fingerprint device processes an input:
(A) Scan finger → Compare with database → Extract features → Grant access
(B) Extract features → Scan finger → Compare with database → Grant access
(C) Scan finger → Extract features → Compare with database → Grant access
(D) Compare with database → Scan finger → Grant access → Extract features

37. During a biometric identification enrollment process, which input devices are specifically used to capture biometric data?
(A) Fingerprint scanner and iris scanner
(B) Flatbed optical scanner and laser barcode reader
(C) Studio microphone and high-speed OMR sheet reader
(D) High-definition web camera and graphics digitizer pad

38. A traditional barcode is composed of which of the following visual elements?
(A) A two-dimensional matrix grid composed of black and white square blocks
(B) A circular geometric pattern formed by multi-colored printed dots
(C) A linear sequence consisting strictly of standard alphanumeric text characters
(D) A series of parallel lines of varying widths

39. What is the fundamental shape of a QR code?
(A) A single continuous horizontal straight line
(B) A two-dimensional square matrix
(C) A complex pattern of concentric circular rings
(D) A structured triangular geometric grid

40. What does the abbreviation QR stand for in "QR code"?
(A) Quality Recognition
(B) Query Result
(C) Quick Response
(D) Quantity Ratio

41. Which of the following technologies is most commonly used at a supermarket checkout counter to quickly identify product prices?
(A) MICR
(B) OMR
(C) Biometric Scanner
(D) Barcode Reader

42. In the context of computer monitors, what does CRT stand for?
(A) Cathode Ray Tube
(B) Central Routing Terminal
(C) Color Rendering Technology
(D) Computer Response Time

43. What is the main difference between an LCD and an LED monitor?
(A) Traditional LCD monitors utilize internal electron guns for illumination, whereas modern LED screens rely exclusively on liquid crystal layers
(B) Both use liquid crystal displays, but LEDs use light-emitting diodes for backlighting
(C) Standard LCD screens display images strictly in black and white, whereas all LED displays operate full high-definition color spectrums
(D) Modern LED monitors are categorized as input peripherals, whereas legacy LCD monitors are categorized exclusively as output devices

44. Match the monitor types in List I with their characteristic features in List II.
List I: (Monitor Type)
P. CRT
Q. LCD
R. LED
S. OLED
List II: (Characteristic Feature)
1. Emits its own light without needing a backlight

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2. Uses fluorescent tubes for backlighting
3. Uses a vacuum tube and electron guns
4. Uses light-emitting diodes for backlighting

(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-4, S-1
(C) P-3, Q-4, R-2, S-1
(D) P-2, Q-3, R-1, S-4

45. The term VDU is often used to refer to a monitor. What does VDU stand for?
(A) Video Display Unit
(B) Virtual Data Unit
(C) Visual Disk Utility
(D) Variable Display Utility

46. What is the smallest unit of a digital image displayed on a monitor?
(A) Byte
(B) Bit
(C) Pixel
(D) Resolution

47. What is the primary function of a computer projector?
(A) To digitally scan and vectorize large-scale physical architectural drawings
(B) To amplify and significantly increase the total volume of computer audio output
(C) To permanently store high-definition digital video files on internal storage
(D) To project display output onto a screen or wall

48. Consider the following statements about projectors:
I. Projectors are output devices.
II. They are commonly used in classrooms and business presentations.
III. Projectors cannot display moving video, only static images.
IV. A projector requires a connection to a computer or media player to function.
Which of the above statement(s) is/are correct?
(A) I, II and III
(B) II, III and IV
(C) I, II and IV
(D) I, III and IV

49. Which of the following devices is used to receive sound output from a computer privately without disturbing others?
(A) Speakers
(B) Headphones
(C) Microphones
(D) Sound card

50. How does a headset differ from a standard pair of headphones?
(A) A headset operates exclusively using wireless signals, whereas standard headphones require a physical wired connection
(B) A headset can only reproduce monaural audio channels, whereas standard headphones reproduce full multi-channel stereo audio
(C) A headset requires a digital USB connection, whereas standard audio headphones plug directly into an analog 3.5mm audio jack
(D) A headset has a built-in microphone, unlike headphones

51. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Computer speakers cannot produce audio if the computer lacks a sound card or integrated audio chip.
Reason (R): The sound card converts digital data from the computer into analog sound waves that the speakers can play.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

52. Which term is used to describe the physical document produced by a printer?
(A) Soft copy
(B) Digital copy
(C) Hard copy
(D) Virtual copy

53. Which of the following is classified as an impact printer?
(A) Dot Matrix printer
(B) High-speed laser printer
(C) Color inkjet printer
(D) Direct thermal printer

54. Which type of printer uses a dry powder called toner to print on paper?
(A) Inkjet printer
(B) Dot Matrix printer
(C) Thermal printer
(D) Laser printer

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55. Which of the following printers creates images by spraying microscopic droplets of liquid ink onto paper?
(A) Laser printer
(B) Inkjet printer
(C) Daisy wheel printer
(D) Plotter

56. What unit is typically used to measure the printing speed of a modern laser or inkjet printer?
(A) RPM (Revolutions Per Minute)
(B) DPI (Dots Per Inch)
(C) PPM (Pages Per Minute)
(D) Hz (Hertz)

57. The quality or resolution of a printer's output is measured in which of the following units?
(A) Megapixels per frame
(B) Pixels per minute
(C) Display Aspect Ratio
(D) DPI (Dots Per Inch)

58. Match the printers in List I with their appropriate technology in List II.
List I: (Printer)
P. Dot Matrix Printer
Q. Laser Printer
R. Thermal Printer
S. Inkjet Printer
List II: (Technology)
1. Uses heat to darken chemically treated paper
2. Uses liquid ink cartridges
3. Uses toner powder and a laser beam
4. Uses pins striking an inked ribbon
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-2, S-1
(C) P-4, Q-2, R-1, S-3
(D) P-1, Q-3, R-4, S-2

59. Which type of printer is most commonly used to print receipts in ATM machines and point-of-sale (POS) systems?
(A) Inkjet color printer
(B) Thermal printer
(C) High-speed laser printer
(D) Vector graphics plotter

60. A plotter is specifically designed to produce which of the following?
(A) High-quality text documents processed at maximum possible printing speed
(B) Vector graphics and architectural drawings
(C) High-resolution digital backup files created from physical printed photographs
(D) Three-dimensional physical models manufactured from extruded plastic layers

61. Which of the following best describes the difference between a printer and a plotter?
(A) Plotters draw continuous vector lines, whereas printers print patterns of dots
(B) Printers function exclusively as data input devices, whereas plotters function exclusively as graphics output devices
(C) Printers create images by drawing continuous lines with pen tools, whereas plotters generate output using fine dot grids
(D) Standard printers are designed strictly for wide promotional banners, whereas plotters handle standard A4 paper documents

62. In the context of computer devices, what does "haptic feedback" refer to?
(A) Visual notifications and alert pop-ups displayed on the primary monitor screen
(B) Audio feedback tones and acoustic alerts played through external headphones
(C) Tactile output providing physical vibrations
(D) Voice recognition commands processed through an active audio microphone

63. Which of the following is a common daily-life example of haptic feedback?
(A) An impact printer generating mechanical operational noise while printing text
(B) A desktop monitor powering off automatically after inactivity to save electricity
(C) A graphical mouse pointer changing its visual shape when hovering over a hyperlink
(D) A smartphone vibrating when typing on its touchscreen

64. Identify the pointing device from the options given below.
(A) Standard keyboard
(B) Display monitor
(C) Trackball
(D) Optical scanner

65. Which of the following groups consists entirely of audio input/output devices?
(A) Display Monitor, Desktop Printer, Vector Plotter
(B) Microphone, Speaker, Headphone
(C) Standard Keyboard, Optical Mouse, Image Scanner
(D) Video Projector, Digital Webcam, Graphics Digitizer

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66. Find the odd one out from the following list of devices.
(A) Keyboard
(B) Mouse
(C) Scanner
(D) Printer

67. Find the odd one out from the following list of devices.
(A) Joystick
(B) Monitor
(C) Projector
(D) Plotter

68. Consider the following statements about device classification:
I. A webcam is an input device.
II. A projector is an output device.
III. A barcode reader is an output device.
Which of the above statement(s) is/are correct?
(A) II and III only
(B) I and III only
(C) I and II only
(D) I, II and III

69. Which of the following is an example of a device that performs both input and output functions?
(A) Modulator-Demodulator (Modem)
(B) High-speed monochrome laser printer
(C) Multi-button ergonomic optical mouse
(D) High-resolution desktop flatbed scanner

70. A Network Interface Card (NIC) handles data traffic for a computer. Under which category of devices does it best fall?
(A) Strictly classified as a purely input device
(B) Strictly classified as a purely output device
(C) Strictly classified as a purely storage device
(D) Both input and output device

71. A Facsimile (Fax) machine essentially combines the functions of which two basic devices?
(A) Keyboard and Monitor
(B) Scanner and Printer
(C) Mouse and Projector
(D) Microphone and Speaker

72. Match the dual-function devices in List I with their primary use in List II.
List I: (Device)
P. Touchscreen
Q. Modem
R. Headset
S. Fax Machine
List II: (Primary Use)
1. Converts digital data to analog audio and analog audio to digital data
2. Sends and receives network data over telephone/cable lines
3. Allows finger touch input and displays visual output
4. Scans paper documents and prints received documents
(A) P-3, Q-1, R-2, S-4
(B) P-4, Q-2, R-1, S-3
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-3, R-4, S-1

73. What is the full form of USB, the most common port used to connect input and output devices?
(A) Universal Standard Bus
(B) Unified Serial Bus
(C) Uninterruptible System Bus
(D) Universal Serial Bus

74. A VGA port is traditionally used to connect which type of output device?
(A) Monitor
(B) Printer
(C) Speaker
(D) Keyboard

75. What does the abbreviation HDMI stand for?
(A) High-Density Memory Interconnection Architecture
(B) High-Definition Multimedia Interface
(C) Hyper-Data Media Interconnection Protocol
(D) High-Definition Multiple Input Network Bus

76. What is the standard size of the traditional audio jack port used to connect standard wired headphones to a computer or smartphone?
(A) 1.5 mm
(B) 2.5 mm
(C) 3.5 mm
(D) 5.0 mm

77. Historically, a parallel port on a computer was most famously used to connect which of the following devices?
(A) Printer
(B) Mouse
(C) Monitor
(D) Microphone

78. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): USB devices are known as "hot-swappable" devices.
Reason (R): They can be plugged in or unplugged

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without needing to restart the computer.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

79. Consider the following statements about computer ports:
I. HDMI ports transmit both high-definition video and audio.
II. A VGA port generally transmits video only, not audio.
III. USB ports can supply electrical power to peripheral devices.
IV. An audio jack can be used to connect an external monitor.
Which of the above statement(s) is/are correct?
(A) I, II and IV
(B) II, III and IV
(C) I, III and IV
(D) I, II and III

80. Wireless keyboards and mice most commonly use which technology to connect to a computer?
(A) Line-of-sight infrared light beams only
(B) High-bandwidth Wi-Fi (802.11ac) network protocols exclusively
(C) Bluetooth or 2.4 GHz wireless
(D) Short-range high-frequency ultraviolet optical waves

81. What is the name of the small USB receiver commonly plugged into a computer to connect a wireless mouse or keyboard?
(A) Router
(B) Dongle
(C) Switch
(D) Repeater

82. What is the typical effective range of a standard Class 2 Bluetooth input device, such as a wireless mouse?
(A) 1 meter
(B) 10 meters
(C) 100 meters
(D) 500 meters

83. Which of the following is considered a primary disadvantage of using wireless input devices compared to wired ones?
(A) They require batteries or regular recharging
(B) They are completely incompatible with modern operating systems
(C) They damage the computer's motherboard over time
(D) They can only be used with desktop computers, not laptops

84. Consider the following statements regarding input devices:
Statement I: A wired keyboard generally has lower input latency (delay) than a standard Bluetooth keyboard.
Statement II: Wireless input devices keep the workspace free of cable clutter.
Which of the following statements is correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

85. With reference to a computer monitor, what does the term "resolution" mean?
(A) The total number of pixels displayed on the screen
(B) The total physical diagonal measurement of the monitor display screen
(C) The rate and speed at which the screen continuously refreshes displayed images
(D) The total electrical power consumption required to run the monitor hardware

86. How does a higher screen resolution affect the image displayed on a monitor of a fixed size?
(A) The image becomes blurred and distorted
(B) The image turns black and white
(C) The image size on the screen cannot be adjusted
(D) The image becomes sharper and more detailed

87. Consider the following statements regarding monitor resolution:
I. 1920 x 1080 is a common Full HD resolution.
II. A monitor with a higher resolution will display fewer details.
III. The resolution determines how many pixels the screen can display.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

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88. How is the physical size of a monitor or laptop screen traditionally measured?
(A) Horizontally across the screen from the far left edge to the far right edge
(B) Vertically down the display surface from the top border to the bottom border
(C) Diagonally from corner to opposite corner
(D) By mathematically calculating the complete surface area of the display panel

89. What does the term "aspect ratio" refer to regarding a monitor?
(A) The ratio of the screen's diagonal length to its horizontal width
(B) The ratio of bright pixels to dark pixels
(C) The ratio of power consumed to heat generated
(D) The ratio of the width of the display to its height

90. What is the most common aspect ratio for modern widescreen computer monitors and televisions?
(A) 4:3
(B) 1:1
(C) 16:9
(D) 21:9

91. The older, box-shaped CRT monitors primarily used which aspect ratio?
(A) 16:9
(B) 16:10
(C) 4:3
(D) 3:2

92. Arrange the following common display resolutions in ascending order from lowest quality to highest quality.
1. 4K Ultra HD
2. Standard Definition (SD)
3. Full HD (1080p)
4. High Definition (720p)

Select the correct order from the options below:
(A) 2, 4, 3, 1
(B) 2, 3, 4, 1
(C) 4, 2, 3, 1
(D) 4, 3, 2, 1

93. Which of the following is the most appropriate immediate action if you accidentally spill liquid on your standard external computer keyboard?
(A) Unplug the keyboard immediately and turn it upside down
(B) Firmly press down on all keycaps simultaneously to squeeze out liquid
(C) Apply an electric hairdryer set to maximum heat directly onto the keys
(D) Immediately reboot the computer operating system with the keyboard connected

94. If an optical mouse becomes unresponsive or jumps erratically on the screen, what is the best first step for maintenance?
(A) Open the PC case and replace the primary graphics processing card
(B) Perform a complete reinstallation of the computer's operating system
(C) Clean the optical sensor underneath using a lint-free cloth
(D) Vigorously shake the mouse peripheral to realign its internal optical mirror

95. What is the purpose of an ergonomic wrist rest placed in front of a keyboard?
(A) To significantly increase overall typing speed and key stroke accuracy
(B) To shield and protect the key switches from ambient environmental dust
(C) To offer a smooth textured surface for an optical mouse to slide across
(D) To reduce wrist strain and prevent Carpal Tunnel Syndrome

96. Consider the following statements concerning precautions for input devices:
I. Avoid eating or drinking directly over the keyboard.
II. Yank cables forcefully to disconnect USB mice.
III. Keep the optical sensor of the mouse free from dust and hair.
IV. Do not press touchscreens forcefully with sharp objects.

Which of the above statement(s) represent(s) good practices?
(A) I, II and III
(B) II, III and IV
(C) I, III and IV
(D) I, II, III and IV

97. If an inkjet printer produces pages with faded text or horizontal white lines, which maintenance task should be performed first?
(A) Purchase and install a brand new high-definition display monitor
(B) Run the printer's internal printhead cleaning utility
(C) Upgrade and increase the total installed

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RAM inside the computer
(D) Replace the existing connection cable with a new USB data cable

98. What is the safest way to clean a standard LCD or LED computer monitor?
(A) Spray liquid glass cleaner directly onto the screen surface and wipe with paper towels
(B) Scrub the display panel thoroughly using a damp sponge soaked in warm soapy water
(C) Apply undiluted industrial alcohol or solvent solutions to dissolve stubborn dust
(D) Gently wipe the screen with a damp microfiber cloth

99. Why is it recommended to use the operating system's "Shut Down" command rather than just unplugging the computer from the wall?
(A) It closes files safely to prevent data corruption and hardware damage
(B) It prevents the high-voltage monitor screen power supply from cracking the display panel
(C) Unplugging directly from the wall socket causes wireless input peripherals to permanently unpair
(D) Executing a proper software shutdown flushes system registers and wipes the keyboard buffer

100. When a laser printer indicates that it is out of ink, what component actually needs to be replaced?
(A) Liquid ink cartridge
(B) Ribbon
(C) Toner cartridge
(D) Printhead

101. Consider the following statements regarding the maintenance of output devices:
I. Direct sunlight can damage an LCD monitor over time.
II. Paper jams in a printer should be cleared by pulling the paper out as forcefully as possible.
III. Thermal printers do not require liquid ink cartridge replacements.
Which of the above statement(s) is/are correct?
(A) I and III only
(B) I and II only
(C) II and III only
(D) I, II and III

102. In computer terminology, any external input or output device connected to the computer is broadly referred to as what?
(A) Central core processing unit
(B) Low-level system software
(C) Primary internal memory module
(D) Peripheral device

103. What does the term "Plug and Play" (PnP) mean in relation to computer peripherals?
(A) The peripheral device is designed strictly and exclusively for interactive video gaming applications
(B) The operating system auto-detects and configures connected devices
(C) The computer platform requires end-users to write custom driver code before hardware will operate
(D) The peripheral device functions only when the host desktop computer is powered directly by a wall socket

104. What is the name of the specialized software that allows the operating system to communicate with a specific input or output device?
(A) Antivirus software suite
(B) High-level language compiler
(C) Device Driver
(D) Modern web browser application

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105. What is a "buffer" in the context of input/output operations?
(A) A permanent non-volatile secondary storage drive used exclusively for automated data backup
(B) A physical protective rubberized casing placed around a computer mouse for durability
(C) The primary central microprocessing chip responsible for executing code inside a printer
(D) A temporary memory area used to hold data during transfer between devices

106. The process of sending print jobs to a temporary queue on the hard disk before they are sent to the printer is known as:
(A) Spooling
(B) Booting
(C) Paging
(D) Compiling

107. The invention of the mouse significantly advanced the use of GUI operating systems. What does GUI stand for?
(A) General Utility Interface
(B) Graphical User Interface
(C) Global User Integration
(D) Graphic Utility Input

108. The QWERTY keyboard layout was originally designed for which mechanical device?
(A) Calculator
(B) Typewriter
(C) Telegraph
(D) Piano

109. Match the terminology in List I with its description in List II.
List I: (Terminology)
P. Peripheral
Q. Driver
R. Buffer
S. Spooling
List II: (Description)
1. Storing data temporarily in a queue before printing
2. External hardware connected to the computer
3. Temporary memory holding data during transfer
4. Software that controls a hardware device
(A) P-2, Q-4, R-3, S-1
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-3, R-4, S-1
(D) P-3, Q-4, R-2, S-1

110. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Device drivers are categorized as system software rather than application software.
Reason (R): They operate in the background to manage hardware and provide a platform for application software to function.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

111. When using an ATM to withdraw money, the screen displaying your account balance functions as which type of device?
(A) Input device
(B) Processing device
(C) Storage device
(D) Output device

112. At a supermarket Point of Sale (POS) terminal, which of the following is primarily an input device?
(A) The receipt printer
(B) The customer-facing total display
(C) The barcode scanner
(D) The cash drawer alarm

113. The remote control of a Smart TV functions primarily as what type of device for the television system?
(A) Output device
(B) Input device
(C) Storage device
(D) Memory unit

114. Voice assistants like Alexa or Siri rely on which hardware device to capture the user's spoken commands?
(A) Speaker
(B) Display screen
(C) Haptic motor
(D) Microphone

115. Consider the following statements about daily-life applications of I/O devices:
I. A smartwatch vibrating to notify a call uses haptic output.
II. Tapping an app icon on a smartphone screen uses the screen as an input device.
III. Listening to music on Bluetooth earbuds utilizes them as input devices.
IV. Scanning a QR code to pay a merchant requires a camera as an input device.
Which of the above statement(s) is/are correct?
(A) I, II and IV
(B) I, II and III
(C) II, III and IV
(D) I, III and IV

116. A digitizer (or graphics tablet) is primarily used for which of the following functions?
(A) Manufacturing physical 3D objects using additive layering
(B) Digitally scanning paper text documents for OCR processing
(C) Converting hand-drawn art into digital format
(D) Projecting high-definition video onto an external wall screen

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117. Which specialized output device is used to produce tactile text for visually impaired individuals?
(A) Braille embosser
(B) Large vector plotter
(C) Direct thermal printer
(D) High-speed inkjet printer

118. Consider the following statements regarding barcode and QR technologies:
I. A barcode can hold more information than a QR code.
II. A QR code can be scanned from multiple angles.
III. QR codes are frequently used in digital payment systems like UPI.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) I, II and III
(D) II and III only

119. Select the correct sequence representing the standard flow of data in a computer system:
(A) Output → Processing → Input → Storage
(B) Input → Processing → Output → Storage
(C) Storage → Output → Input → Processing
(D) Processing → Input → Storage → Output

120. Which input device remains stationary on the desk while the user rolls a ball on top of it to move the cursor?
(A) Stylus
(B) Light pen
(C) Trackball
(D) Joypad

121. What does the abbreviation MIDI stand for in the context of electronic musical keyboards used as input devices?
(A) Multiple Input Data Interface Architecture
(B) Main Integrated Digital Input Protocol System
(C) Music Interchange Data Input Specification
(D) Musical Instrument Digital Interface

122. A light pen is a light-sensitive input device commonly used for what purpose?
(A) Pointing to or drawing directly on a CRT screen
(B) Highlighting physical text passages inside printed paper books
(C) Scanning inventory barcodes on product packages in a warehouse
(D) Digitally erasing active electronic ink layers on a graphics tablet

123. The refresh rate of a computer monitor, which affects how smooth motion appears, is measured in which unit?
(A) Megabytes (MB)
(B) Hertz (Hz)
(C) Pixels per inch (PPI)
(D) Milliseconds (ms)

124. In the context of computer monitors, what is "response time" usually measured in?
(A) Hertz refresh rate
(B) Milliseconds (ms)
(C) Screen pixels count
(D) Memory bytes total

125. What is the most significant drawback of impact printers like the dot matrix printer?
(A) They are extremely noisy during operation
(B) They are completely incapable of printing multi-part carbon forms
(C) Their ink dries up very quickly
(D) They print much faster than laser printers

126. A Daisy Wheel printer is categorized under which type of printer?
(A) Non-impact printer
(B) Laser printer
(C) Impact printer
(D) Thermal printer

127. Which pointing device is built directly into laptops and functions by sensing the user's finger movement across a small flat surface?
(A) Trackball
(B) Joystick
(C) Light pen
(D) Touchpad

128. What is the difference between a "dumb terminal" and a "smart terminal"?
(A) A smart terminal is completely unable to establish internet connections, whereas a dumb terminal possesses full networking hardware
(B) A dumb terminal serves exclusively as a hardcopy paper printer, whereas a smart terminal functions solely as a display monitor
(C) Dumb terminals lack local processing power, whereas smart terminals have built-in processing
(D) A dumb terminal operates entirely through touchscreen interfaces, whereas a smart

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terminal relies strictly on physical keyboards

129. The overall purpose of computer input and output devices is best summarized as:
(A) Generating electrical power for the motherboard
(B) Facilitating human-computer interaction
(C) Executing logical and arithmetic operations
(D) Keeping the computer components cool

130. Select the correct order of the following stages as they occur when you type a document and then print it:
1. The CPU processes the keystrokes and formats the document.
2. The user types on the keyboard.
3. The printed paper comes out of the printer.
4. The monitor displays the typed text.
(A) 2, 4, 1, 3
(B) 2, 1, 4, 3
(C) 1, 2, 4, 3
(D) 4, 2, 1, 3

131. Which feature differentiates a smart interactive whiteboard from a standard projector screen?
(A) It registers touch/pen inputs for the computer
(B) It requires absolutely no electrical power or batteries to function
(C) It can only display low-resolution monochrome black and white images
(D) It automatically prints hard copies of whatever content is displayed

132. Which of the following is NOT a characteristic of a flatbed scanner?
(A) It features a flat glass bed on which physical documents are placed for scanning
(B) The internal optical scanning head mechanism glides directly beneath the glass
(C) The user must manually drag it across paper
(D) It is routinely employed for scanning thick bound books or fragile media sheets

133. Consider the following statements about a computer keyboard:
I. The spacebar is the longest key on the keyboard.
II. The escape key (Esc) is generally used to cancel or abort the current operation.
III. The enter key confirms commands or moves the cursor to a new line.
IV. Numeric keypads are usually placed on the left side of standard keyboards.
Which of the above statement(s) is/are correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

134. Which of the following combinations of devices is required to conduct a standard video call on a desktop PC?
(A) Printer, Scanner, Mouse, Keyboard
(B) Plotter, Joystick, Touchpad, Monitor
(C) Barcode Reader, Monitor, Speaker, Headphone
(D) Webcam, Microphone, Speaker, Monitor

135. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Optical Marks Recognition (OMR) scanners are the preferred input method for processing large volumes of objective test papers.
Reason (R): OMR technology detects the presence or absence of a mark (like a darkened bubble) by analyzing light reflection.
Which of the following is correct?
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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136. What kind of output does an audio speaker produce?
(A) Processed digital data stream
(B) High-definition video frames
(C) Analog sound waves
(D) Encoded binary computer code

137. Which of the following is an example of a situation where you would use an OCR scanner instead of an OMR scanner?
(A) Evaluating darkened answer choices on an objective examination sheet
(B) Scanning product identification barcodes on packaged items at a grocery store
(C) Scanning biometric thumbprints for secure citizen authentication
(D) Converting printed pages into editable text files

138. Which of the following key combinations is NOT primarily associated with standard typing, but rather modifying other keys?

(A) Shift, Ctrl, Alt
(B) Enter, Space, Backspace
(C) A, B, C
(D) 1, 2, 3

139. Match the output devices in List I with their specific use case in List II.
List I: (Output Device)
P. Plotter
Q. Projector
R. Thermal Printer
S. Laser Printer
List II: (Use Case)
1. Presenting slides to a large audience
2. Printing high-volume office text documents
3. Printing architectural CAD drawings
4. Printing bus tickets or ATM receipts
(A) P-1, Q-3, R-2, S-4
(B) P-3, Q-1, R-4, S-2
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-1, R-4, S-3

140. Which of the following best defines the role of a driver in a computer system managing an output device like a printer?
(A) It supplies and regulates the internal electrical power required to drive printer motors
(B) It translates commands between operating system and hardware
(C) It mechanically engages motor gears to pull paper through the internal print rollers
(D) It serves as a secure permanent storage vault holding hard copies of all documents

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ANSWERS

1. (B) A hardware component used to send data and control signals to the computer
An input device serves as a primary peripheral component enabling users to feed raw data, instructions, and control signals directly into a computer system for processing. These devices bridge human actions and digital processing by converting real-world inputs into machine-readable electronic signals, allowing the central processing unit to execute user commands efficiently and accurately.

2. (D) To convert machine-readable information into a human-readable form
An output device plays a critical role in computer architecture by receiving processed digital data from the system processing unit and transforming it into understandable formats. It presents results through visual screens, physical printed sheets, or audible sound waves, enabling users to comprehend, evaluate, and utilize the processed information generated during computational operations.

3. (A) Input devices translate human commands to machine language, while output devices translate machine language to human-understandable form
Input and output peripherals perform complementary functions within computer systems. Input peripherals receive user actions or environmental measurements and encode them into binary signals for central processing. Output peripherals perform the reverse operation by translating binary machine instructions and processed results back into human-understandable forms, such as displayed graphics, printed text, or sound waves.

4. (C) I, II and IV
Standard keyboards act solely as input mechanisms, while touchless monitors function exclusively as output displays. Input devices lack persistent storage capacity, as permanent data storage remains restricted to dedicated secondary media like hard drives or solid-state drives. Output devices present varied digital data types, including visual graphics and text, rather than being limited to acoustic speech generation.

5. (A) Plotter
A plotter is an automated mechanical output device designed to print high-quality vector graphics, blueprints, and architectural diagrams using precise continuous pen strokes. Conversely, barcode readers, optical mark readers, and light pens function exclusively as input peripherals by capturing optical data or hand movements and sending encoded electronic signals into the computer system for immediate digital processing.

6. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Optical image scanners function fundamentally as computer input devices because they capture physical paper documents, printed text, and graphics to generate corresponding digital representations. The scanning mechanism systematically converts optical reflections into binary data streams, enabling the central computer system to process, edit, store, or transmit digital image files across software applications.

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7. (B) QWERTY
The QWERTY design serves as the global standard key arrangement for English language computer keyboards and alphanumeric input interfaces. Named after the initial six letters located on the top alphabetic key row, this specific configuration was originally created during the nineteenth century to optimize mechanical typewriter action and prevent physical key jams during typing.

8. (B) 12
Standard full-sized computer keyboards designed for Windows operating systems feature twelve dedicated function keys, labeled sequentially from F1 through F12 along the top row. These specialized keys perform predefined software tasks, execute quick system shortcuts, or trigger operating system utilities, assisting users in streamlining workflow efficiency and managing software controls without extensive mouse navigation.

9. (D) Modifier keys
Modifier keys, including Shift, Control, and Alternate, alter the normal action of other keys when pressed in combination with them. Rather than generating standalone characters, these specialized keys temporarily modify key input signals to execute system commands, access capital letters, activate keyboard shortcuts, or trigger specific software functions within modern operating system environments.

10. (A) Num Lock
The Num Lock key acts as a dedicated toggle control on standard computer keyboards, enabling or disabling the numeric keypad functionality. When activated, the keypad functions primarily as an efficient calculator-style number pad for rapid numerical entry. When deactivated, the same keys transition into directional navigation controls, such as directional arrow movements and scrolling commands.

11. (B) Caps Lock
A toggle key switches an operational mode between two distinct states each time it is pressed. Caps Lock exemplifies this function by toggling alphabetic key output between uppercase and lowercase text. Pressing it once locks character input to capital letters, while pressing it again restores normal lowercase entry, providing consistent typing control without requiring continuous key pressure.

12. (B) Ctrl
The Control key represents a modifier key used in conjunction with other keys to perform shortcuts and system operations. In contrast, keys labeled F1, F5, and F12 belong to the dedicated functional key group arranged along the top row of standard keyboards, which execute specialized predefined tasks directly within operating systems and software applications.

13. (A) Optical sensor module
Modern optical mice utilize an integrated light-emitting diode paired with a high-speed miniature optical sensor to detect movement. By taking thousands of snapshot pictures per second of the underlying desktop surface, the optical sensor tracks positional changes continuously and translates surface pattern variations into precise digital cursor movements across the computer display screen.

14. (C) Douglas Engelbart
Computer scientist Douglas Engelbart invented the original computer mouse during the 1960s while conducting human-computer interaction research at the Stanford Research Institute. His early prototype featured a carved wooden shell housing two perpendicular metal wheels, laying the technological foundation for modern spatial pointing peripherals, desktop navigation, and graphical user interface development.

15. (D) To open or execute the file
Double-clicking the primary left mouse button in rapid succession serves as a standard graphical interaction command across mainstream computer operating systems. This specific action signals the system to execute an executable file, open a selected document in its associated application, or explore a targeted folder directory within the desktop graphical user interface environment.

16. (C) P-2, Q-4, R-1, S-3
Standard mouse actions perform specific user interface tasks. A single left click selects a target item on screen. Double left clicking opens an executable file or application. A right click opens a contextual shortcut menu containing action options. Clicking and dragging moves selected graphical objects or files to new visual screen locations effortlessly.

17. (D) Statement I is false but Statement II is true
A trackball mouse remains stationary on the desk while the user rotates an exposed sphere to navigate the cursor, making physical sliding unnecessary. The integrated scroll wheel provides smooth vertical movement through lengthy electronic documents, spreadsheets, and web pages, allowing users to inspect visual content without manually dragging scrollbars on the screen.

18. (D) To convert physical documents into digital formats
An optical scanner captures physical images, printed text, and paper documents using light sensors to convert physical media into editable or archivable digital graphics files. This process enables computer systems to store, modify, analyze, and distribute physical paperwork electronically across digital networks, bridging physical documentation and computer storage repositories.

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19. (A) Optical Character Recognition
Optical Character Recognition refers to the automated electronic technology that analyzes printed or handwritten text characters captured from physical paper documents or bitmap images. By converting these visual shapes into machine-encoded editable text data, OCR enables word processors, databases, and search software to recognize, edit, index, and manage document text efficiently.

20. (C) Flatbed scanner
Flatbed scanners serve as the standard desktop input equipment for homes and business offices. Featuring a flat glass pane topped with an adjustable lid, they allow users to lay single A4 paper sheets, photographic prints, or bound books flat while an internal optical sensor glides beneath, producing crisp, high-resolution digital image captures.

21. (A) OMR
Optical Mark Recognition technology evaluates marked objective answer sheets by detecting light reflected from pre-printed examination bubbles. The specialized scanner shines light onto paper forms to measure reflectivity differences between marked dark bubbles and clean paper, allowing high-speed automated scoring of standardized multiple-choice tests with complete processing accuracy and minimal operational delay.

22. (D) Pointing input device
A joystick acts as a directional pointing input device composed of a vertical stick that pivots upon a stationary base. By tilting the stick in various directions, the user feeds continuous angular data and spatial coordinates into a computer system, enabling precise real-time steering control over software avatars, virtual cursors, and simulation equipment.

23. (B) Flight simulators and gaming
Joysticks are heavily utilized within interactive computer gaming, flight simulation environments, and virtual training machinery. Their multi-directional control stick allows operators to execute smooth 3D steering maneuvers, pitch control, and altitude adjustments, replicating real-world aviation control yokes more realistically than standard alphanumeric keyboards or conventional optical mice.

24. (C) A gamepad is held in both hands using thumb controls, while a joystick uses a single vertical stick
Gamepads and joysticks differ primarily in physical design and handling. A gamepad is designed to be held comfortably in both hands, using directional thumb pads, miniature analog sticks, and action buttons. Conversely, a traditional joystick features a single tall vertical lever mounted on a base, operated using hand movements for directional steering.

25. (D) Microphone
A microphone operates as an acoustic input peripheral that captures airborne sound waves generated by speech, ambient noise, or musical instruments. It converts mechanical sound vibrations into equivalent analog electrical signals, which sound processing hardware converts into digital audio streams for recording, voice communication, recognition, and software transmission.

26. (A) To capture live video and images for the computer
A webcam serves as a compact digital video input device connected directly to or integrated within personal computers. Its principal function involves capturing real-time video feeds and still photographs, enabling users to participate in live internet video calls, host virtual meetings, stream live video broadcasts, and record local digital media files.

27. (B) I and II only
Microphones convert analog sound waves into digital audio data, while webcams record live visual video streams for digital communications, such as video conferencing. Both hardware devices function strictly as computer input peripherals rather than output equipment, as they capture real-world data and transmit digital information into the host computer system.

28. (B) Magnetic Ink Character Recognition
Magnetic Ink Character Recognition represents a specialized character-recognition technology used globally within financial institutions. MICR readers scan characters printed in iron-oxide magnetic ink along the bottom of financial documents, converting magnetic signatures into digital text to verify document authenticity, streamline transaction processing, and minimize manual data entry errors.

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29. (A) Reading numbers on bank cheques
Financial institutions utilize MICR technology primarily to process paper bank cheques rapidly and securely. Special magnetic ink numbers printed along cheque bottoms encode account numbers, routing codes, and cheque identifiers. MICR readers detect these magnetic footprints even through stamp marks or smudges, preventing cheque fraud and facilitating automated high-speed bank clearing.

30. (C) A pen-like device used to draw on touchscreens
A stylus is a handheld pen-shaped input device designed for direct interaction with capacitive or resistive touchscreens and digital graphics tablets. It allows users to write handwritten notes, sketch digital artwork, navigate menus, and select on-screen items with high precision, offering greater accuracy than using human fingertips on touch surfaces.

31. (D) Touchscreen
A touchscreen operates simultaneously as an input and output device. It functions as a visual output display by presenting graphics and video interfaces to the user, while its touch-sensitive surface layer detects finger contact or pen gestures to register input commands, eliminating the necessity for external keyboards or dedicated mice.

32. (C) Capacitive touchscreen
Capacitive touchscreens rely on the electrical properties of the human body to register input. The screen surface features a conductive layer that accumulates static electrical charge. When a bare conductive finger touches the glass surface, it alters the local electrostatic field, allowing internal sensors to pinpoint touch coordinates accurately.

33. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Graphics tablets rely on specialized pressure-sensitive styluses to capture precise artistic input. The pen-like stylus transmits positional tracking and pressure variations to the digitizer board, allowing digital illustrators to draw smooth lines, shade artwork, and replicate traditional physical drawing media on computer displays with exceptional control and fluid natural movement.

34. (D) To authenticate individuals using unique biometric patterns
A fingerprint scanner functions as a biometric input security device that captures detailed optical, capacitive, or thermal images of human finger ridge patterns. By matching captured biometric features against stored user records, the scanner verifies personal identities securely, granting access to restricted software, personal mobile hardware, and physical security facilities.

35. (A) Iris scanner
An iris scanner is a biometric input device that analyzes unique structural patterns within human eye irises. By taking high-resolution infrared photographs of the iris, the scanner extracts distinct biological identifiers, enabling highly reliable person identification and identity verification for high-security applications, personal computing systems, and automated access control environments.

36. (C) Scan finger → Extract features → Compare with database → Grant access
Biometric fingerprint authentication follows a precise sequential workflow. The scanner initial captures an optical image of the physical finger. Specialized algorithms extract unique ridge features and minutiae points from the scan. These digital features are compared against stored database templates, ultimately granting access if a accurate match is confirmed.

37. (A) Fingerprint scanner and iris scanner
Biometric enrollment processes require specialized input hardware capable of capturing distinct biological features from individuals. Fingerprint readers capture unique friction ridge details on fingers, while iris scanners photograph complex visual patterns within human irises. Both devices capture immutable physiological traits, generating digital biometric profiles used for secure identity verification.

38. (D) A series of parallel lines of varying widths
A traditional linear barcode comprises a structured sequence of parallel black lines and white spaces of varying widths. This visual pattern encodes numerical or alphanumeric data readable by optical barcode scanners. The spatial arrangement of lines represents specific inventory numbers, allowing computers to process product information rapidly during retail checkout operations.

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39. (B) A two-dimensional square matrix
A Quick Response code is structured as a two-dimensional square matrix composed of black squares on a white background grid. Unlike linear barcodes, QR codes store data both vertically and horizontally, allowing them to hold substantially larger volumes of information, including website links, text records, contact details, and payment credentials.

40. (C) Quick Response
The acronym QR stands for Quick Response, highlighting the technology's design objective of enabling rapid data extraction and high-speed optical scanning. QR codes allow optical imaging devices, mobile camera sensors, and dedicated readers to decode contained digital data almost instantaneously from any reading angle within modern interactive environments.

41. (D) Barcode Reader
Supermarket point-of-sale checkout counters rely on optical barcode readers to identify retail inventory products rapidly. Scanning the linear barcode printed on product packaging retrieves pricing details and inventory stock descriptions instantly from connected retail store databases, significantly reducing customer checkout processing time while preventing manual cashier keyboard entry mistakes.

42. (A) Cathode Ray Tube
CRT stands for Cathode Ray Tube, representing an early display hardware technology used in legacy computer monitors and television screens. CRT monitors contained large glass vacuum tubes equipped with electron guns that fired focused electron beams against an internal phosphorescent glass screen, illuminating colored dots to generate visual desktop images.

43. (B) Both use liquid crystal displays, but LEDs use light-emitting diodes for backlighting
Liquid Crystal Display and Light Emitting Diode monitors rely on identical liquid crystal layers to manipulate pixel visibility and display visual images. However, standard LCD monitors employ Cold Cathode Fluorescent Lamps for backlighting, whereas LED monitors use energy-efficient light-emitting diodes, providing superior image contrast, vibrant colors, and thinner screen profiles.

44. (B) P-3, Q-2, R-4, S-1
Display monitor technologies feature distinct light emission characteristics. Cathode Ray Tube displays utilize heavy glass vacuum tubes with electron guns. Standard Liquid Crystal Displays rely on fluorescent tubes for internal backlighting. Light Emitting Diode displays employ efficient LED backlights. Organic LED panels feature self-emissive organic pixels, producing light without secondary backlights.

45. (A) Video Display Unit
VDU stands for Video Display Unit, a standard technical term used to describe computer monitor hardware. A Video Display Unit encompasses the physical display screen and associated internal circuitry, functioning as the primary visual output hardware responsible for presenting text data, graphics, user interface elements, and video media to operators.

46. (C) Pixel
A pixel, short for picture element, represents the smallest controllable digital dot forming a graphic image on visual computer display screens. Thousands or millions of individual red, green, and blue pixels illuminate at varying light intensities across a display grid to form complete text, raster graphics, digital photographs, and video output.

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47. (D) To project display output onto a screen or wall
A computer projector operates as an external visual output device designed to magnify visual output from connected devices onto large surfaces, such as projection screens or walls. Projectors utilize powerful light sources and optic lenses, making them ideal for classroom teaching, corporate conference presentations, cinema screenings, and large-scale public displays.

48. (C) I, II and IV
Projectors act as visual output peripherals that receive video feed signals from connected computing hardware to present multimedia content across large physical surfaces. They are extensively used across corporate offices and educational institutions. Projectors handle both stationary graphic slides and moving full-motion video feeds smoothly during audio-visual operations.

49. (B) Headphones
Headphones function as personal acoustic output devices worn directly over or inside a user's ears. By directing sound waves straight into the ear canal, headphones allow individuals to listen to computer audio, video soundtracks, and voice communications privately without disturbing surrounding people or introducing ambient environmental background noise.

50. (D) A headset has a built-in microphone, unlike headphones
Headsets and headphones differ primarily in integrated audio functionality. Standard headphones serve exclusively as audio listening output devices. In contrast, a headset combines audio output speakers with an integrated microphone input boom, enabling two-way voice communication required for online video calls, multiplayer gaming, voice recording, and call center applications.

51. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
External computer speakers require integrated audio controllers or sound expansion cards to function. Computers process audio internally using digital binary data, which speakers cannot translate directly. Sound cards perform essential digital-to-analog conversion, converting digital audio streams into analog electrical audio signals that physical speaker drivers output as audible sound waves.

52. (C) Hard copy
A hard copy refers to a permanent physical document or image output printed onto tangible media like paper, film, or cardstock by a printer or plotter. Unlike soft copies displayed temporarily on electronic monitor screens, hard copies remain readable independently without requiring electrical power, computer displays, or digital storage devices.

53. (A) Dot Matrix printer
A Dot Matrix printer is an impact printer that generates text and graphic images through mechanical force. It utilizes tiny metal pins to strike an inked fabric ribbon against paper sheets, creating visible character patterns formed by small dot grids. This physical impact capability makes it useful for printing multi-part carbon copies.

54. (D) Laser printer
Laser printers are high-speed non-impact printing devices that utilize fine dry plastic powder known as toner. A focused laser beam creates an electrostatic latent image across a rotating photosensitive drum, attracting toner particles onto charged areas. The drum transfers toner onto paper, where heated rollers fuse the image permanently.

55. (B) Inkjet printer
Inkjet printers generate high-resolution print output by precisely propelling microscopic liquid ink droplets through tiny printhead nozzles onto paper surfaces. This non-impact printing process allows smooth ink blending and accurate color reproduction, making inkjet printers popular choices for home offices, document printing, and photo printing tasks.

56. (C) PPM (Pages Per Minute)
Pages Per Minute serves as the standard measurement metric for evaluating the operational speed of modern laser and inkjet printers. PPM quantifies how many full paper sheets a printing device can process and output within one minute under standardized document conditions, providing a clear benchmark for operational document efficiency.

57. (D) DPI (Dots Per Inch)
Printer resolution and print quality are measured in Dots Per Inch. DPI quantifies the density of individual microscopic ink or toner dots a printer places within a one-inch line on paper. Higher DPI values indicate higher print resolutions, producing sharper text characters, finer graphic details, and smoother tonal gradients.

58. (A) P-4, Q-3, R-1, S-2
Printers utilize distinct printing mechanics to transfer media images onto paper. Dot Matrix printers utilize physical pins striking inked ribbons. Laser printers employ charged toner powder and laser beams. Thermal printers apply controlled heat onto chemically treated paper. Inkjet printers generate output using liquid ink sprayed from fine nozzles.

59. (B) Thermal printer
Thermal printers are widely deployed across point-of-sale systems, automated teller machines, and retail receipt counters. These non-impact printers heat selected areas of specialized heat-

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sensitive paper to create dark images without requiring liquid ink or ribbon cartridges, offering quiet operation, fast printing speeds, low maintenance costs, and compact physical hardware footprints.

60. (B) Vector graphics and architectural drawings
A plotter is a specialized hardcopy output peripheral engineered to draw high-precision vector graphics, engineering schematics, and architectural blueprints. Unlike standard pixel printers, plotters use automated continuous pen arms to render crisp continuous lines, geometric figures, and large-format designs directly onto oversized paper formats with exceptional graphic detail.

61. (A) Plotters draw continuous vector lines, whereas printers print patterns of dots
The principal distinction between printers and plotters lies in their underlying image generation mechanics. Standard document printers construct images and text using matrix patterns of individual raster dots. Conversely, plotters draw continuous vector lines using automated moving pens, producing smoother, highly accurate graphic lines essential for technical schematics and large blueprints.

62. (C) Tactile output providing physical vibrations
Haptic feedback refers to tactile output technology that conveys information to users through physical sensations, such as controlled vibrations, forces, or mechanical motions. Integrated haptic motors simulate realistic physical contact, enhancing user immersion in touchscreens, video game controllers, virtual reality gloves, and mobile notifications through physical feedback.

63. (D) A smartphone vibrating when typing on its touchscreen
Smartphone touchscreens vibrating during virtual key presses present a common daily application of haptic feedback. Internal haptic actuators generate short, localized physical vibrations each time a virtual key is touched, confirming key registration through tactile sensations that compensate for the absence of physical moving keys on flat glass displays.

64. (C) Trackball
A trackball is a pointing input device featuring an exposed rotatable sphere held within a stationary socket. Users manipulate the cursor across a computer display screen by rotating the ball with their fingers or thumb, offering smooth spatial pointing control while eliminating the physical workspace area required by traditional movable optical mice.

65. (B) Microphone, Speaker, Headphone
Microphones, sound speakers, and audio headphones form a complete category of audio peripherals. Microphones capture external acoustic sound waves and encode them into digital binary audio input streams. Conversely, speakers and headphones act as sound output equipment, converting processed digital signals into audible physical sound waves for human listeners.

66. (D) Printer
A printer functions strictly as a hardcopy output device that produces physical paper documents from processed digital data. Conversely, standard keyboards, optical mice, and optical image scanners belong exclusively to the computer input device category, capturing text entry, positional user movements, or paper document data into digital processing channels.

67. (A) Joystick
A joystick is an input device designed to navigate cursors and manage spatial positioning in software. Conversely, monitors, projectors, and plotters function as dedicated output peripherals, transforming internal digital computer data into visible on-screen graphics, projected multimedia displays, or continuous vector drawings printed on physical paper sheets.

68. (C) I and II only
Webcams function as input devices by capturing live video feeds into computer systems, while video projectors act as output devices by casting screen displays onto large projection surfaces. Barcode readers function as input devices because they optically scan bar patterns and send product data directly into computer systems for processing.

69. (A) Modulator-Demodulator (Modem)
A modem acts as a dual-function input and output communication peripheral. During output operations, it modulates digital computer signals into analog waves for transmission across telecommunication lines. During input operations,

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it demodulates incoming analog signals back into binary computer data, facilitating bidirectional communication across remote networks and global internet connections.

70. (D) Both input and output device
A Network Interface Card functions as a dual-function input and output hardware component. It transmits outbound data packets generated by local applications onto network infrastructure as output, while simultaneously intercepting inbound network traffic and delivering processed data frames to the host operating system as input, facilitating two-way network communications.

71. (B) Scanner and Printer
A Fax machine combines optical scanning and printing capabilities into a single communication device. The sending unit utilizes internal scanner components to digitize physical paper documents for transmission over telecommunication lines. Upon receipt, the receiving fax unit utilizes printing mechanisms to reproduce physical paper hardcopies of transmitted document pages.

72. (C) P-3, Q-2, R-1, S-4
Combination hardware devices integrate multiple functions. Touchscreens process finger touches as input while displaying visual graphics as output. Modems send and receive network signals over telecommunication lines. Headsets handle microphone voice inputs and speaker audio outputs. Fax machines combine document scanning with paper printing mechanisms for communication.

73. (D) Universal Serial Bus
USB stands for Universal Serial Bus, an industry standard interface protocol established to connect peripheral hardware to computing equipment. USB handles high-speed data transmission and low-voltage electrical power delivery over standardized cables, allowing users to connect keyboards, mice, flash drives, external storage drives, and printers effortlessly across diverse computing devices.

74. (A) Monitor
A Video Graphics Array port is an analog display connector traditionally utilized to attach computer monitors and visual display units to desktop host computers. The VGA standard transmits analog RGB video signals across a fifteen-pin connector, delivering display resolution content to CRT screens, LCD monitors, and external presentation projectors.

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75. (B) High-Definition Multimedia Interface
HDMI stands for High-Definition Multimedia Interface, an all-digital audio and video interface standard. HDMI cables transmit uncompressed digital video signals alongside multi-channel digital audio through a single compact connection cable, making them standard interfaces for modern computer monitors, high-definition televisions, projectors, and digital home media systems.

76. (C) 3.5 mm
The standard analog audio jack used globally across personal computers, laptops, media players, and smartphones measures 3.5 millimeters in diameter. Commonly known as a headphone jack or auxiliary port, this TRS connection interface transmits analog stereo audio signals directly to connected wired headphones, external speakers, and microphones.

77. (A) Printer
Historically, legacy computers utilized parallel ports to attach paper printing devices and dot matrix equipment. Featuring a 25-pin DB-25 connection interface, the parallel port transmitted multiple bits of binary data simultaneously across parallel wires, offering high data transmission speeds for printing before Universal Serial Bus interfaces became standard.

78. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
USB peripherals are designated as hot-swappable devices because they can be connected or disconnected from host computers while system power remains active. Operating systems detect hardware insertions and removals automatically using Plug and Play software protocols, eliminating system restarts or complex power shutdown procedures when attaching peripheral hardware.

79. (D) I, II and III
HDMI ports transmit high-definition digital video and multi-channel digital audio simultaneously over one cable, while VGA ports transmit video signals exclusively. USB ports deliver operational power along with data lines. Audio jack ports handle audio sound signals exclusively and

cannot deliver video output signals to external display monitors.

80. (C) Bluetooth or 2.4 GHz wireless
Modern wireless computer mice and keyboards operate primarily using short-range radio frequency technology, specifically Bluetooth standards or dedicated 2.4 GHz wireless frequencies. These wireless connectivity protocols eliminate physical desk cable clutter, delivering reliable input data transmission across distances without requiring direct visual line-of-sight positioning between peripherals and host receivers.

81. (B) Dongle
A dongle is a compact USB radio frequency receiver plugged directly into host computer ports to establish wireless connections with external keyboards or optical mice. Operating over designated radio frequencies, the dongle captures wireless signal inputs from peripherals and translates them into standard USB input commands recognized by operating systems.

82. (B) 10 meters
Standard Class 2 Bluetooth devices, including most wireless mice, keyboards, and audio headsets, operate within a maximum effective range of approximately 10 meters. This distance provides stable, low-power radio communication across typical room environments, allowing seamless peripheral operation without significant signal degradation or interference from minor physical obstacles.

83. (A) They require batteries or regular recharging
A primary operational drawback of wireless input peripherals relative to traditional wired alternatives involves their reliance on internal batteries or periodic electrical recharging. When battery charge levels deplete, wireless keyboards and mice can become unresponsive unexpectedly, requiring user intervention to replace batteries or connect charging cables during tasks.

84. (A) Both Statement I and Statement II are true
Wired keyboards deliver lower latency input responses than Bluetooth devices because physical copper wires transmit keystroke signals instantaneously without wireless processing delays. Simultaneously, wireless peripherals improve desk organization by eliminating physical cable tangles, providing cleaner working environments and greater flexibility in positioning keyboards and mice across desk surfaces.

85. (A) The total number of pixels displayed on the screen
Screen resolution describes the total count of distinct pixels displayed horizontally and vertically across a monitor screen. Expressed as pixel dimensions, such as 1920 by 1080, screen resolution dictates graphic clarity, as higher pixel counts allow operating systems to render finer graphical details, sharper text, and expansive desktop workspaces.

86. (D) The image becomes sharper and more detailed
Increasing the screen resolution on a monitor of fixed physical size packs a greater number of smaller pixels into the screen area. Higher pixel density enhances picture clarity, sharper text rendering, finer lines, and smoother graphic detail, improving overall visual presentation for digital imagery, document viewing, and video content.

87. (B) I and III only
Resolution specifies the total number of pixels a display screen presents across its visual surface grid, with 1920 by 1080 representing standard Full HD resolution. Higher screen resolutions pack more pixels into the display area, rendering finer detail and sharper visual images rather than reducing graphic rendering details.

88. (C) Diagonally from corner to opposite corner
The physical display size of computer monitors, laptop panels, and televisions is measured diagonally across the visual viewable area, from one screen corner to the opposite corner. Expressed in inches, this diagonal measurement provides a standard metric for comparing physical screen dimensions across diverse display hardware designs and aspect ratios.

89. (D) The ratio of the width of the display to its height
Aspect ratio specifies the proportional relationship between the horizontal width and vertical height of a visual display monitor screen. Expressed as two numbers separated by a colon, aspect ratio defines the structural shape of display panels, influencing content layout, video playback borders, and document arrangement across screen surfaces.

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90. (C) 16:9
The 16:9 aspect ratio represents the global standard shape for modern widescreen computer monitors, high-definition displays, and televisions. This rectangular format matches wide aspect video standards used across digital broadcasting, internet video streaming, and video gaming, providing immersive visual experiences while reducing letterboxing black bars on screens.

91. (C) 4:3
Older Cathode Ray Tube display monitors utilized a boxy 4:3 aspect ratio, where screen width exceeded screen height by a relatively small proportion. This nearly square format was standard across legacy computing systems and analog television broadcasting before modern widescreen 16:9 high-definition displays became dominant across computing environments.

92. (A) 2, 4, 3, 1
Display resolutions progress logically in quality based on total pixel counts. Standard Definition offers the lowest pixel resolution, followed by High Definition (720p). Full HD (1080p) delivers higher pixel density and image clarity, while 4K Ultra HD represents the highest display resolution in this group, featuring exceptional graphic sharpness.

93. (A) Unplug the keyboard immediately and turn it upside down
Accidental liquid spills on computer keyboards require immediate disconnection from host hardware to eliminate short circuits and electrical damage. Turning the keyboard upside down immediately drains trapped fluid away from sensitive underlying circuit boards and contact membranes, minimizing corrosion risks and preserving physical hardware component integrity during drying.

94. (C) Clean the optical sensor underneath using a lint-free cloth
Optical mice may track erratically when dust particles, stray hairs, or surface debris accumulate across the underlying optical sensor aperture. Gently wiping the optical lens clean using a soft lint-free microfiber cloth restores unhindered light path reflection, allowing internal sensors to accurately record movement across desktop surfaces.

95. (D) To reduce wrist strain and prevent Carpal Tunnel Syndrome
Ergonomic wrist rests placed before keyboards maintain neutral wrist positioning during extended typing sessions. By elevating wrists to parallel key height, these accessories reduce tendon bending, relieve pressure across median nerves within wrist passages, lower muscle fatigue, and assist in preventing repetitive strain injuries like Carpal Tunnel Syndrome.

96. (C) I, III and IV
Safe input device maintenance includes keeping food and liquids clear of keyboards, maintaining clean mouse optical sensors, and protecting touchscreens from sharp physical impacts. Forcefully pulling cables damages internal wiring; USB connectors should always be disconnected gently by gripping the protective plug head directly to avoid hardware degradation.

97. (B) Run the printer's internal printhead cleaning utility
Faded printed text or persistent horizontal white bands across inkjet printouts usually indicate clogged printhead micro-nozzles resulting from dried ink residue. Running the software driver's automated printhead cleaning utility flushes trapped ink deposits through nozzles, restoring uniform ink delivery and consistent print quality without requiring hardware replacements.

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98. (D) Gently wipe the screen with a damp microfiber cloth
Cleaning sensitive LCD or LED monitor displays requires non-abrasive care to protect delicate anti-reflective screen coatings. Wiping screen surfaces gently using a clean microfiber cloth lightly dampened with plain water removes dust and smudges safely, avoiding harsh chemical cleaners, alcohol solvents, or paper towels that scratch display surfaces.

99. (A) It closes files safely to prevent data corruption and hardware damage
Executing an operating system's software shutdown command ensures open files, active applications, and system registers save state properly before system power terminates. Unplugging active hardware abruptly can disrupt pending write operations, corrupt critical operating system files, damage file directory structures, and risk potential storage device hardware failures.

100. (C) Toner cartridge
Laser printers utilize dry plastic powder known as toner rather than liquid ink cartridges. When a laser printing unit signals depleted supply levels, the empty toner cartridge must be replaced. This cartridge houses the replacement toner powder that electrostatic drum mechanisms transfer onto paper to generate crisp text and images.

101. (A) I and III only
Prolonged direct sunlight exposure damages delicate LCD monitor panels over time, whereas thermal printers heat special paper directly without requiring liquid ink cartridges. Paper jammed inside printing equipment should be removed carefully and gently along the paper path direction, as forceful pulling tears paper and damages internal mechanical rollers.

102. (D) Peripheral device
Peripheral device serves as the comprehensive hardware term for external equipment attached to host computer systems. Peripherals expand operational capabilities by handling data input, visual output, or secondary data storage, encompassing hardware components like keyboards, mice, monitors, desktop printers, external hard drives, and digitizing scanners.

103. (B) The operating system auto-detects and configures connected devices
Plug and Play denotes standard hardware hardware functionality that allows operating systems to automatically detect, configure, and initialize connected peripheral devices upon insertion. PnP eliminates manual jumper configuration, hardware address assignments, and complex setup software installations, enabling attached peripheral devices to function seamlessly almost immediately after connection.

104. (C) Device Driver
A device driver is specialized system software designed to enable host operating systems to interact with connected hardware devices. Device drivers function as software translators, converting high-level operating system instructions into low-level hardware commands understood by specific peripherals like printers, graphics cards, network adapters, and scanners.

105. (D) A temporary memory area used to hold data during transfer between devices
A buffer is a dedicated temporary memory region utilized to hold data temporarily while it transfers between hardware devices or processes operating at differing speeds. Buffers compensate for speed variations between fast microprocessors and slower peripheral equipment, ensuring smooth continuous data flow without stalling overall system performance.

106. (A) Spooling
Spooling refers to the system process of transferring document print jobs into a temporary disk storage queue before sending them sequentially to printers. By queuing print tasks on disk, spooling frees host applications immediately, allowing users to continue working productively while printers process queued jobs at their own operational speed.

107. (B) Graphical User Interface
GUI stands for Graphical User Interface, a visual interactive operating environment that allows users to control computer software using visual icons, windows, menus, and spatial pointing devices. Graphical User Interfaces replaced complex text command-line screens, simplifying human-computer interaction and popularizing mouse navigation across personal computing platforms.

108. (B) Typewriter
Christopher Sholes designed the QWERTY key arrangement during the 1870s specifically for mechanical typewriters. Spacing commonly paired English letters farther apart reduced physical mechanical typebar clashes and jam occurrences during rapid typing, establishing a typing standard that persisted into modern computer keyboards, touchscreens, and digital interfaces.

109. (A) P-2, Q-4, R-3, S-1
Computing terminology defines specific hardware and operational processes. Peripherals represent external hardware attached to host systems. Drivers serve as system software controlling specific hardware units. Buffers provide temporary memory during data transfers. Spooling queues document print jobs on disk storage prior to printing.

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110. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Device drivers fall under system software because they operate continuously in the background to manage low-level hardware devices. Drivers provide essential hardware translation layers that hide underlying physical complexities, enabling user applications to interact with peripheral equipment uniformly across computing platforms without hardware-specific code.

111. (D) Output device
An automated teller machine screen presenting account balances acts as a visual output device during balance inquiries. The screen receives processed account data from connected banking servers and displays formatted numerical characters and text graphics, allowing users to inspect visual information clearly without altering financial system data.

112. (C) The barcode scanner
Barcode scanners positioned at point-of-sale checkout terminals function as primary data input devices. They optically scan code patterns printed on merchandise packaging, translate reflections into digital product identifiers, and transmit data into point-of-sale computers for price calculation, stock tracking, and sales receipt processing.

113. (B) Input device
Smart TV remote controls act as primary input peripherals for television systems. By pressing physical buttons or utilizing directional pads, users transmit infrared or radio frequency command signals to television units, enabling remote channel selection, volume adjustments, menu navigation, and application control across smart home entertainment setups.

114. (D) Microphone
Intelligent voice assistants rely on integrated microphones to capture human speech. Microphones convert acoustic voice vibrations into digital audio streams, which voice recognition algorithms parse to interpret spoken commands, execute software requests, control smart home automation, and deliver spoken responses through connected acoustic audio speakers.

115. (A) I, II and IV
Smartwatch vibrations represent tactile haptic output, smartphone touchscreens capture touch inputs, and cameras serve as optical input devices when scanning payment QR codes. Listening to audio through Bluetooth earbuds utilizes them as acoustic output peripherals rather than input devices, as sound signals travel from smartphones to ears.

116. (C) Converting hand-drawn art into digital format
A digitizer, commonly known as a graphics tablet, converts hand-drawn artwork, freehand sketches, and signatures into precise digital formats. Illustrators draw across the pressure-sensitive board using specialized styluses, capturing spatial strokes, line thickness, and pressure variations, which software translates into smooth vector drawings on screen displays.

117. (A) Braille embosser
A Braille embosser is a specialized output device designed to print tactile text for visually impaired individuals. It converts electronic document text into standardized tactile Braille patterns, punching raised dots onto heavy paper stock to enable visually impaired users to read physical documents through touch.

118. (D) II and III only
Quick Response codes store significantly higher data volumes than standard linear barcodes and offer 360-degree multidirectional optical scanning capabilities. These features make QR codes widely adopted in digital payment applications, mobile banking transfers, website link sharing, and electronic ticketing systems across modern mobile computing platforms.

119. (B) Input → Processing → Output → Storage
Standard computer data processing follows a sequential four-stage workflow: input, processing, output, and storage. Input peripherals capture external data into the system, the central processing unit processes data into meaningful results, output devices display or print output, and secondary storage devices save results permanently.

120. (C) Trackball
A trackball is a stationary pointing input device featuring a rotatable sphere mounted within a fixed base. Instead of sliding the hardware body across desk surfaces like traditional optical mice, users roll the exposed sphere directly using

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fingertips or thumbs to control visual screen cursor positioning precisely.

121. (D) Musical Instrument Digital Interface
MIDI stands for Musical Instrument Digital Interface, a technical standard protocol that connects electronic musical instruments, synthesis keyboards, and computers. MIDI cables transmit digital performance data—such as note pitch, velocity, volume, and control signals—enabling computers to record, synthesize, and edit musical performances across software digital audio workstations.

122. (A) Pointing to or drawing directly on a CRT screen
A light pen is a light-sensitive wand input peripheral historically used to draw or select items directly on Cathode Ray Tube displays. When pointed at the screen, internal photoelectric sensors detect light emissions from passing electron beams, allowing host hardware to calculate exact screen positions for drawing and menu selection.

123. (B) Hertz (Hz)
The refresh rate of visual display monitors is measured in Hertz. Hertz quantifies how many times per second display hardware redraws the visual screen image. Higher refresh rates, such as 120Hz or 144Hz, produce smoother motion rendering, reduced motion blur, and seamless visual transitions during high-speed video playback and interactive gaming.

124. (B) Milliseconds (ms)
Monitor response time is measured in milliseconds. Response time indicates the speed at which individual display pixels transition from one color state to another, such as black to white or gray to gray. Lower response times reduce ghosting artifacts, motion blur, and visual trailing around fast-moving graphics on screen displays.

125. (A) They are extremely noisy during operation
A primary operational drawback of impact printers, such as dot matrix printers, is the high acoustic noise level generated during active printing operations. The repeated physical striking of metal pins against inked ribbons and paper creates loud mechanical clatter, rendering them less desirable in quiet office environments compared to silent non-impact printers.

126. (C) Impact printer
A Daisy Wheel printer is categorized as an impact printer. It utilizes a rotating plastic or metal wheel featuring pre-formed character shapes at the ends of petals. A mechanical hammer strikes character petals against an inked ribbon onto paper, producing crisp letter-quality text while generating loud mechanical noise during printing.

127. (D) Touchpad
A touchpad is a stationary pointing device integrated into laptop computers. Featuring a touch-sensitive surface, it senses finger movement and pressure, converting surface gestures into cursor tracking and clicking commands on screen displays, providing built-in mouse functionality within compact portable computing designs.

128. (C) Dumb terminals lack local processing power, whereas smart terminals have built-in processing
Dumb terminals consist purely of display monitors and keyboards without local central processing units, relying entirely on remote mainframe computers for computational processing. In contrast, smart terminals contain local processing units and memory modules, allowing them to process data locally before transmitting results to host networks.

129. (B) Facilitating human-computer interaction
Computer input and output devices facilitate effective human-computer interaction. Input peripherals enable human users to enter data, commands, and media into computer systems, while output peripherals convert internal digital results into human-understandable visual, acoustic, or printed forms, bridging human intent and computational processing.

130. (B) 2, 1, 4, 3
Document creation follows a structured sequence. First, the user types text on a keyboard. Next, the central processing unit processes keystrokes and formats document layout. The monitor then displays updated text on screen. Finally, the printer prints document hardcopies on paper, completing the workflow.

131. (A) It registers touch/pen inputs for the computer
An interactive smart whiteboard combines display output with direct input capabilities. Unlike passive projection screens that only

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display projected video, interactive whiteboards feature touch-sensitive surfaces or optical sensors that capture finger touches and stylus strokes, sending real-time drawing and navigation commands directly into connected computer software.

132. (C) The user must manually drag it across paper
Flatbed scanners feature stationary glass surfaces topped with flexible lids, housing internal optical scanning heads that slide automatically beneath paper sheets. Unlike handheld scanners that require manual dragging across paper documents, flatbed scanners remain stationary while scanning bound books, photographs, and loose document sheets with high alignment precision.

133. (A) I, II and III
On standard computer keyboards, the spacebar represents the longest key, the escape key cancels active operations, and the enter key confirms commands or inserts line breaks. Numeric keypads are placed on the right side of standard full-sized keyboards rather than the left, assisting right-handed numerical entry.

134. (D) Webcam, Microphone, Speaker, Monitor
Conducting interactive video calls requires a balanced combination of audio-visual input and output peripherals. A webcam captures real-time video input, a microphone records spoken voice input, a speaker outputs incoming conversation audio, and a display monitor presents live video feeds of call participants.

135. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Optical Mark Recognition scanners serve as the standard choice for scoring large volumes of objective test papers. OMR devices shine light beams onto answer sheets and measure reflection intensity across pre-printed bubbles; darkened pencil marks reflect significantly less light than blank paper, enabling rapid automated scoring without manual evaluation errors.

136. (C) Analog sound waves
Audio speakers function as acoustic output devices that transform incoming electrical audio signals into physical analog sound waves. Internal voice coils and vibrating diaphragms move surrounding air, producing audible acoustic vibrations that human ears perceive as music, speech, background audio, and system notifications.

137. (D) Converting printed pages into editable text files
Optical Character Recognition scanners are selected over OMR devices when converting printed paper documents into editable digital text files. While OMR merely detects dark mark presence in predefined bubbles, OCR software analyzes letter shapes and character structures within scanned images, translating physical text into editable word processor files.

138. (A) Shift, Ctrl, Alt
Shift, Control, and Alternate function as dedicated keyboard modifier keys rather than standard character typing keys. When held in combination with alphanumeric keys, they alter standard key output signals to execute system shortcuts, enter capital letters, trigger operating system functions, and access specialized software commands.

139. (B) P-3, Q-1, R-4, S-2
Specific output devices fulfill distinct application roles. Vector plotters render continuous line architectural blueprints. Projectors display slide presentations across large wall screens. Thermal printers produce quick retail receipts and transport tickets without liquid ink. Laser printers deliver fast, high-volume document printing for office environments.

140. (B) It translates commands between operating system and hardware
A device driver functions as an essential software translation layer between the operating system and hardware devices like desktop printers. It converts high-level printing instructions issued by software applications into low-level device control codes, ensuring printers interpret document layout, graphic coordinates, and color formatting accurately during output operations.

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CHAPTER 06

Internet Protocol and IP Address

1. What is the standard definition of a protocol in the context of computer networks?
(A) A piece of hardware used to connect two computers
(B) A set of rules and guidelines for communicating data between devices
(C) A software application used to browse the web
(D) An operating system service that allocates memory

2. What does TCP stand for in the TCP/IP network model?
(A) Transfer Control Protocol
(B) Transport Central Protocol
(C) Transmission Communication Protocol
(D) Transmission Control Protocol

3. Consider the following statements regarding network protocols:
I. Protocols define the format and order of messages exchanged between devices.
II. Without protocols, devices would not be able to understand the electronic signals they receive.
III. All protocols are exclusively hardware-based and cannot be implemented in software.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

4. Which of the following is the primary function of the Internet Protocol (IP) in a network?
(A) To ensure that data is encrypted before leaving the computer
(B) To establish a guaranteed connection before sending any data
(C) To route and address data packets so they can travel across networks and arrive at the correct destination
(D) To convert domain names into MAC addresses

5. Which of the following is NOT a network protocol?
(A) HTML
(B) HTTP
(C) FTP
(D) SMTP

6. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): TCP is considered a reliable protocol.
Reason (R): TCP guarantees the delivery of data packets by requesting retransmission of lost packets.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

7. What is the fundamental difference between TCP and IP?
(A) TCP provides connectionless packet delivery service, while IP offers a connection-oriented transmission layer.
(B) TCP ensures data is delivered correctly and in order, while IP only handles the addressing and routing.
(C) TCP is designed and used exclusively for email transmission, while IP is used only for web page browsing.
(D) TCP manages physical MAC addresses for hardware devices, while IP manages logical network addresses.

8. In the TCP/IP model, which protocol is responsible for breaking down data into packets and reassembling them at the destination?
(A) IP
(B) HTTP
(C) TCP
(D) DNS

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9. Match the protocols in List I with their primary functions in List II:
List I: (Protocols)
P. HTTP
Q. FTP
R. SMTP
S. TCP
List II: (Functions)
1. File transfer between a client and a server
2. Reliable data transmission
3. Web page browsing
4. Sending email messages
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-1, R-3, S-2

10. Which protocol suite is the foundational communication language of the Internet?
(A) TCP/IP
(B) OSI Model
(C) IPX/SPX
(D) NetBIOS

11. What is the full form of HTTP in the context of web communication?
(A) Hyperlink Transfer Technology Protocol
(B) Hyper Text Transmission Process
(C) Hyperlink Text Transfer Protocol
(D) Hyper Text Transfer Protocol

12. What does the letter 'S' stand for in HTTPS?
(A) Standard
(B) Secure
(C) System
(D) Synchronous

13. Given below are two statements:
Statement I: Data sent over HTTP is in plain text and can be easily intercepted.
Statement II: HTTPS uses encryption to protect the data transferred between the browser and the website.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

14. Which default port number is used by the HTTP protocol?
(A) 21
(B) 25
(C) 80
(D) 443

15. Find the odd one out from the following list of terms.
(A) FTP protocol
(B) HTTP protocol
(C) Windows
(D) SMTP protocol

16. Consider the following statements regarding the FTP protocol:
I. FTP stands for File Transfer Protocol.
II. It is used to upload and download files between a client and a server.
III. It normally uses port numbers 20 and 21.
IV. It is primarily used for streaming live video online.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

17. Which protocol is most commonly used by web developers to upload a website's files to a remote web server?
(A) IMAP
(B) DHCP
(C) POP3
(D) FTP

18. Which of the following is the most appropriate description of Anonymous FTP?
(A) A privacy-focused network service that hides and masks the user's IP address while browsing online
(B) A method of logging into an FTP server without a specific user account or password
(C) A specialized communication protocol used exclusively for file transfers on the dark web
(D) An encrypted file transfer protocol that uses SSL/TLS to protect network communication

19. Which of the following statements about HTTPS is incorrect?
(A) It requires an SSL/TLS certificate to function.
(B) It protects against eavesdropping and tampering of communication.
(C) It is strongly recommended for websites handling online payments.
(D) It operates by default on port 80.

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20. When you type a web address starting with "https://", which protocol is responsible for establishing a secure connection?
(A) TLS/SSL
(B) FTP
(C) SMTP
(D) ICMP

21. What is the full form of SMTP in email communication?
(A) Secure Message Transmission Protocol
(B) System Mail Transfer Protocol
(C) Simple Mail Transfer Protocol
(D) Synchronized Mail Tracking Protocol

22. Which protocol is exclusively used to send outgoing email from an email client to a mail server?
(A) POP3
(B) IMAP
(C) FTP
(D) SMTP

23. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): IMAP is generally preferred over POP3 for users who access their email from multiple devices.
Reason (R): IMAP syncs messages across all devices and leaves the original email on the server, whereas POP3 typically downloads and deletes it from the server.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

24. What is the primary function of the POP3 protocol?
(A) To route and send outgoing emails across intermediate mail transfer servers
(B) To retrieve and download emails from a mail server to a local client
(C) To automatically encrypt and decrypt sensitive digital email attachments
(D) To translate domain names into IP addresses for destination mail delivery

25. Consider the following statements about email protocols:
I. SMTP is a push protocol used for sending emails.
II. POP3 is a pull protocol used for receiving emails.
III. IMAP prevents the user from organizing emails into folders on the server.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

26. Match the email protocols in List I with their typical default port numbers (unencrypted) in List II:
List I: (Email Protocols)
P. SMTP
Q. POP3
R. IMAP
S. HTTP
List II: (Default Port Numbers)
1. Port 143
2. Port 80
3. Port 25
4. Port 110
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-1, Q-2, R-3, S-4
(D) P-3, Q-1, R-4, S-2

27. What is the primary advantage of IMAP over POP3?
(A) It significantly reduces overall internet bandwidth consumption when retrieving new message files.
(B) It is the primary standardized transmission protocol capable of sending emails across distinct network domains.
(C) It allows users to view headers and manage emails directly on the server without downloading them fully.
(D) It provides instant open mailbox access without requiring standard password authentication procedures.

28. In the protocol POP3, what does the letter 'P' stand for?
(A) Post
(B) Protocol
(C) Point
(D) Public

29. Which of the following is NOT an email protocol?
(A) SMTP
(B) IMAP

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(C) POP3
(D) SNMP

30. Which of the following pairs of protocol and function is correctly matched?
(A) SMTP - Downloading and storing large files from a remote web server
(B) HTTP - Accessing and managing email messages stored on a central mail server
(C) IMAP - Accessing and managing emails on a server
(D) POP3 - Assigning logical IP addresses dynamically to client hosts

31. What is the definition of an IP address?
(A) A permanent physical hardware address hardcoded directly into the network interface card by the device manufacturer
(B) A unique numerical label assigned to every device connected to a computer network that uses the Internet Protocol
(C) A secret security password or cryptographic key required to connect and gain access to a local Wi-Fi network
(D) A standardized structural design format and language specification used primarily for creating web pages

32. What is the full form of DHCP, the protocol that assigns dynamic IP addresses?
(A) Dynamic Host Configuration Protocol
(B) Data Handling Control Management Protocol
(C) Domain Host Communication System Protocol
(D) Digital Hypertext Control Service Protocol

33. A dynamic IP address is typically assigned by which network component or protocol?
(A) A DNS Server
(B) The MAC address
(C) An SMTP Server
(D) A DHCP Server

34. Consider the following statements regarding static and dynamic IP addresses:
I. A static IP address remains constant and does not change over time.
II. A dynamic IP address is leased for a specific time and can change.
III. Static IP addresses are commonly used for web servers and email servers.
IV. Dynamic IP addresses must be configured manually on every client device.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

35. In which of the following scenarios is a static IP address most appropriate?
(A) A mobile smartphone continuously moving and handoff switching between different cellular network towers
(B) A temporary guest laptop connecting to a public cafe Wi-Fi network
(C) A company's main web server hosting its public website
(D) A smart light bulb operating locally in a home network

36. Given below are two statements:
Statement I: No two active devices on the public internet can have the same public IP address at the same time.
Statement II: Two devices in different private home networks can have the same private IP address (like 192.168.1.5).
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

37. Which of the following is a key characteristic of a dynamic IP address?
(A) It requires the network administrator to manually enter the address on each PC.
(B) It is permanently assigned to a device for its entire lifespan.
(C) It changes periodically or when the device disconnects and reconnects to the network.
(D) It is typically used for devices that need to be consistently found by other users on the internet, like DNS servers.

38. Find the odd one out from the following list.
(A) Dynamic IP
(B) Static IP
(C) MAC Address
(D) IPv4 Address

39. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Internet Service Providers (ISPs)

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usually assign dynamic IP addresses to home broadband users.
Reason (R): ISPs have a limited pool of public IP addresses and dynamic allocation allows them to recycle IP addresses from users who are currently offline.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

40. Which of the following statements about IP addresses is incorrect?
(A) An IP address identifies a device on a network.
(B) A device can have both a public and a private IP address indirectly.
(C) An IP address can only contain letters, not numbers.
(D) Both IPv4 and IPv6 are versions of IP addresses.

41. How many bits are used in an IPv4 address?
(A) 16 bits
(B) 32 bits
(C) 64 bits
(D) 128 bits

42. What is the standard format used to represent an IPv4 address?
(A) Dotted decimal notation
(B) Hexadecimal notation
(C) Binary notation with colons
(D) Octal notation with hyphens

43. In an IPv4 address, what is the maximum possible value of any single octet (part)?
(A) 128
(B) 255
(C) 256
(D) 512

44. Which of the following is an invalid IPv4 address?
(A) 192.168.1.1
(B) 10.0.0.255
(C) 192.168.300.5
(D) 172.16.254.1

45. Consider the following statements about the structure of an IPv4 address:
I. It is divided into four sections called octets.
II. Each octet represents 8 bits of data.
III. The octets are separated by commas.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

46. Match the IPv4 address classes in List I with their starting first octet ranges in List II:
List I: (IPv4 Address Classes)
P. Class A
Q. Class B
R. Class C
S. Class D (Multicast)
List II: (First Octet Ranges)
1. 192 to 223
2. 1 to 126
3. 224 to 239
4. 128 to 191
(A) P-2, Q-4, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-1, R-4, S-3
(D) P-4, Q-2, R-1, S-3

47. An IPv4 address is typically divided into two main parts. What are they?
(A) Hardware ID and Software ID
(B) Network ID and Host ID
(C) Client ID and Server ID
(D) MAC ID and Routing ID

48. Select the correct order of default subnet masks for Class A, Class B, and Class C networks respectively.
(A) 255.255.0.0, 255.0.0.0, 255.255.255.0
(B) 255.0.0.0, 255.255.0.0, 255.255.255.0
(C) 255.255.255.0, 255.255.0.0, 255.0.0.0
(D) 255.0.0.0, 255.255.255.0, 255.255.0.0

49. Which of the following correctly identifies a loopback IP address used to test a computer's own network interface?
(A) 192.168.1.1
(B) 10.0.0.1
(C) 127.0.0.1
(D) 255.255.255.255

50. In a typical home network router, the IP address 192.168.1.1 belongs to which IPv4 class?
(A) Class A
(B) Class B
(C) Class C
(D) Class D

51. How many bits are used in an IPv6 address?
(A) 32 bits

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(D) The geographic physical location and rack setup of a server hardware unit located inside a enterprise data center

107. Which default port number is used for secure web browsing (HTTPS)?
(A) 21
(B) 25
(C) 80
(D) 443

108. Which of the following is the correct pair of protocol and its standard port number?
(A) SMTP - Port 25
(B) HTTP - Port 21
(C) FTP - Port 80
(D) HTTPS - Port 110

109. What is the total number of logical ports available in the TCP/IP suite?
(A) 256
(B) 1024
(C) 65,535
(D) 1,048,576

110. Which of the following protocol-to-port mappings is incorrect?
(A) SMTP - 443
(B) FTP - 21
(C) HTTP - 80
(D) POP3 - 110

111. Which of the following best recalls the use of port numbers in networking?
(A) They completely replace logical IP addresses when identifying host devices on internal local area networks.
(B) They allow a single device with one IP address to run multiple network applications simultaneously without mixing up their data.
(C) They determine the exact physical path, intermediate optical links, and hardware device hops a data packet takes through a network router.
(D) They are specialized control rules used exclusively by network firewalls to block physical MAC hardware addresses.

112. Select the correct order of the following well-known port numbers in ascending order:
(A) FTP, SMTP, HTTP, HTTPS
(B) SMTP, FTP, HTTP, HTTPS
(C) HTTP, FTP, SMTP, HTTPS
(D) FTP, HTTP, SMTP, HTTPS

113. Which of the following is the most appropriate range for "Well-Known Ports" designated for common system services?
(A) 0 to 1023
(B) 1024 to 49151
(C) 49152 to 65535
(D) 1 to 100

114. Which of the following statements is correct regarding Port 53?
(A) It serves as the primary default standardized network port used for sending outgoing email messages via SMTP.
(B) It is used by the Domain Name System (DNS) for resolving domain names.
(C) It represents the encrypted secure communication port designated for logging into remote Linux servers via SSH.
(D) It is the specialized utility port assigned to automatically allocate dynamic host IP addresses using DHCP.

115. Find the odd one out among the following values.
(A) Standard Port 80
(B) Standard Port 443
(C) Standard Port 21
(D) 192.168.1.1

116. What is a firewall in the context of computer networks?
(A) A physical structural wall built inside data centers designed to prevent server racks and computer hardware from overheating
(B) A network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules
(C) A specialized software utility program used exclusively to create compressed backup copies of important operating system files
(D) A standardized cryptographic communication protocol used to encrypt and decrypt sensitive email messages sent across networks

117. Given below are two statements:
Statement I: A firewall can be implemented as either hardware or software, or a combination of both.
Statement II: A firewall establishes a barrier between a trusted internal network and an untrusted external network like the internet.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true

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IPv6 headers exclusively use raw binary form.

60. What is the full form of NAT, a technology widely used in IPv4 networks to delay the depletion of public IP addresses?
(A) Network Address Translation
(B) Node Access Terminal Service
(C) Network Allocation Routing Table
(D) Node Address Transmission Protocol

61. What is the definition of a private IP address?
(A) An IP address that is directly assigned by an ISP and completely visible to anyone on the public internet
(B) An IP address reserved for internal use behind a router or firewall, not routable on the public internet
(C) An IP address classification reserved exclusively for high-security communications within government agencies
(D) A specialized encrypted IP address format utilized exclusively for secure online commercial banking transactions

62. Which of the following ranges represents a block of Private IP addresses?
(A) 8.8.8.0 to 8.8.8.255
(B) 192.168.0.0 to 192.168.255.255
(C) 17.0.0.0 to 17.255.255.255
(D) 200.1.1.0 to 200.1.1.255

63. Consider the following statements regarding public IP addresses:
I. A public IP address must be globally unique across the entire internet.
II. A public IP address can be freely assigned by an individual user without contacting an ISP.
III. Public IP addresses are required for a web server to be accessible from the outside world.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

64. Which global authority is responsible for the overall management and allocation of public IP addresses?
(A) W3C (World Wide Web Consortium)
(B) IANA (Internet Assigned Numbers Authority)
(C) IEEE (Institute of Electrical and Electronics Engineers)
(D) ISO (International Organization for Standardization)

65. Given below are two statements:
Statement I: Private IP addresses are routable over the global internet.
Statement II: Network Address Translation (NAT) allows multiple devices on a private network to share a single public IP address.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

66. Find the odd one out among the following IP addresses.
(A) 8.8.8.8
(B) 10.5.5.5
(C) 172.16.1.1
(D) 192.168.1.100

67. What is the full form of DNS in the context of internet networks?
(A) Data Network System
(B) Domain Name System
(C) Digital Name Server
(D) Dynamic Network Service

68. What is the primary function of the Domain Name System (DNS)?
(A) To continuously scan and filter all incoming and outgoing email messages for security threats and viruses
(B) To convert human-readable domain names (like www.google.com) into machine-readable IP addresses
(C) To permanently assign unique physical MAC addresses to network interface cards during manufacturing
(D) To automatically encrypt all wireless data packets traveling over a local Wi-Fi router network

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69. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): DNS is often referred to as the "phonebook of the internet."
Reason (R): Just as a phonebook translates a person's name into a phone number, DNS

(A) The physical Ethernet patch cable that directly connects the client desktop computer to the network wall socket
(B) The IP address of the router interface that connects the local network to outside networks like the Internet
(C) The default web browser application program pre-installed on the host operating system during initial setup
(D) The primary domain name resolution DNS server assigned automatically to the router by the internet service provider

89. Consider the following statements about routers and IP addresses:
I. A router operates at the Network Layer of the OSI model.
II. A router forwards data packets based on IP addresses.
III. A router can connect networks that have different subnets.
IV. A router uses MAC addresses to route packets across the global internet.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, III, and IV
(C) II, III, and IV
(D) I, II, and IV

90. Which layer of the OSI model is primarily responsible for logical addressing (IP addresses) and routing?
(A) Physical Layer
(B) Data Link Layer
(C) Network Layer
(D) Transport Layer

91. Given below are two statements:
Statement I: A switch connects multiple devices within the same network.
Statement II: A router connects multiple different networks together.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

92. What is the full form of SSID in the context of Wi-Fi networks?
(A) Secure Server Identification
(B) Service Set Identifier
(C) System Security Interface Device
(D) Signal Strength Indicator Display

93. When a smartphone connects to a home Wi-Fi network, how does it usually obtain its IP address?
(A) By algorithmically generating a pseudo-random private address directly derived from its hardware MAC address
(B) Through a DHCP service running on the home Wi-Fi router
(C) By automatically sending an encrypted diagnostic SMS activation message to the cellular ISP network
(D) By querying a remote public domain name system (DNS) server to request a dynamic local address assignment

94. Which statement accurately describes the relationship between a router and DHCP in a typical home network?
(A) The router automatically disables all DHCP services by default in order to conserve overall network bandwidth
(B) The router acts as a DHCP server to automatically assign local IP addresses to connected devices.
(C) The router utilizes DHCP to request and assign individual public IP addresses to every single client device in the home
(D) The router strictly requires a dedicated separate external hardware DHCP server device to operate Wi-Fi connections

95. Match the network devices in List I with their primary functions in List II:
List I: (Network Devices)
P. Router
Q. Switch
R. Modem
S. Access Point
List II: (Primary Functions)
1. Modulates and demodulates analog/digital signals for internet connection
2. Provides wireless connectivity to a wired network
3. Connects devices within a LAN using MAC addresses
4. Routes data packets between different networks using IP addresses
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-2, S-1
(C) P-1, Q-2, R-3, S-4
(D) P-4, Q-1, R-3, S-2

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data packets globally across the public internet, while IP addresses are strictly restricted to local physical network delivery.
(B) MAC addresses ensure data reaches the correct physical device on a local network, while IP addresses route data between different networks.
(C) MAC addresses are exclusively designed and used for wireless Wi-Fi connections, while IP addresses are strictly utilized for wired Ethernet connections.
(D) MAC addresses standardly use dotted decimal representation format, while IP network addresses rely exclusively on hexadecimal system formatting.

80. Consider the following statements about MAC addresses:
I. It is assigned by the manufacturer of the Network Interface Card (NIC).
II. The first half of the MAC address identifies the manufacturer (OUI).
III. A MAC address is easily routable over the public internet by routers.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

81. Which of the following is a standard format for a MAC address?
(A) 192.168.1.1
(B) 00:1A:2B:3C:4D:5E
(C) fe80::1ff:fe23:4567:890a
(D) www.example.com

82. Which network device uses MAC addresses to forward data frames to the correct device within a local area network (LAN)?
(A) Router
(B) Hub
(C) Switch
(D) Modem

83. Which of the following statements about a MAC address is incorrect?
(A) It operates exclusively at the Data Link layer (Layer 2) of the OSI network architecture model.
(B) It consists of exactly 12 hexadecimal digits organized into six distinct byte groups.
(C) It changes automatically every time the computer is restarted.
(D) It is also commonly known and referred to as a physical hardware address burned into the NIC.

84. Arrange the following networking concepts in the order of the OSI model layers they operate on, from lowest (Layer 2) to highest (Layer 7):
I. HTTP Protocol
II. MAC Address
III. IP Address
(A) II, III, I
(B) I, II, III
(C) III, II, I
(D) II, I, III

85. Find the odd one out among the following terms related to network addressing.
(A) Hardware Address
(B) Physical Address
(C) Logical Address
(D) MAC Address

86. What is the definition of subnetting in computer networks?
(A) Combining and merging multiple distinct small physical networks into a single massive unified network infrastructure
(B) The practice of dividing a single large network into smaller, manageable logical sub-networks
(C) Automatically converting and mapping an existing legacy IPv4 address format to a modern IPv6 address format
(D) The administrative security process of masking and hiding a user's true origin IP address using a remote proxy server

87. Which of the following is the most appropriate reason for implementing subnetting in a corporate network?
(A) To artificially increase the bit length and complexity of the hardware MAC address on all endpoints
(B) To improve network performance, reduce broadcast traffic, and enhance security
(C) To completely bypass and eliminate the requirement for subscribing to a commercial Internet Service Provider
(D) To allow web browser applications on desktop computers to execute scripts and load web pages faster

88. In the context of a local network, what is a "default gateway"?

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(A) Microsoft Corporation
(B) ICANN (Internet Corporation for Assigned Names and Numbers)
(C) ISO (International Organization for Standardization Committee)
(D) ANSI (American National Standards Institute)

127. In a Windows operating system, which Command Prompt utility is commonly used to find a computer's local IP address?
(A) ping
(B) ipconfig
(C) traceroute
(D) netstat

128. Given below are two statements:
Statement I: The "ipconfig" command is used in Windows to display network configuration details.
Statement II: The "ifconfig" command is historically used in Linux/Unix environments for a similar purpose.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

129. Which of the following is the most appropriate method for an ordinary home user to find out their public IP address assigned by their ISP?
(A) Typing the "ipconfig" diagnostic command into the Windows command prompt executable utility
(B) Checking the physical label underneath the Wi-Fi router
(C) Searching "What is my IP" on a web search engine like Google
(D) Looking at the MAC address in the network adapter properties

130. What is the definition of the "ping" command in computer networking?
(A) A system administration tool used exclusively to format remote network drives and logical partitions
(B) A utility used to test the reachability of a host on an IP network and measure round-trip time
(C) A high-level command utility used to download and upload large binary files from a remote FTP server
(D) A security protocol used to encrypt user authorization passwords transmitted over wireless Wi-Fi links

131. Which underlying protocol is utilized by the "ping" command to send echo request and echo reply messages?
(A) TCP (Transmission Control Protocol Suite)
(B) UDP (User Datagram Protocol Standard)
(C) ICMP (Internet Control Message Protocol)
(D) HTTP (Hypertext Transfer Protocol Engine)

132. Which of the following is the best application of the ping command?
(A) To check and verify if a sent email message has been opened and read by the recipient
(B) To verify basic network connectivity between two computers
(C) To compress and archive large file folders before emailing them as attachments
(D) To scan a local desktop computer system thoroughly for security malware and viruses

133. When troubleshooting a local internet connection issue, a technician typically pings addresses in a specific order. Which of the following represents a logical sequence to isolate a network problem?
(A) Ping a website on the Internet → Ping the local router (gateway) → Ping the loopback address (127.0.0.1)
(B) Ping the loopback address (127.0.0.1) → Ping the local router (gateway) → Ping a website on the Internet
(C) Ping the local router (gateway) → Ping the loopback address (127.0.0.1) → Ping a website on the Internet
(D) Ping a website on the Internet → Ping the loopback address (127.0.0.1) → Ping the local router (gateway)

134. When interpreting the results of a ping test, what does a high latency (response time) in milliseconds (ms) usually indicate?
(A) The network connection between devices is performing at optimal speeds and maximum efficiency
(B) There is a delay or congestion in the network between the source and destination.
(C) The destination target host device's local hard drive storage capacity is completely full
(D) The local client computer's active antivirus security software has been completely disabled

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96. Which of the following is NOT a typical function of a network router?
(A) Assigning local IP addresses using DHCP
(B) Providing Network Address Translation (NAT)
(C) Filtering web content using a built-in firewall
(D) Storing backup copies of user hard drives

97. In a standard home Wi-Fi setup, which IP address is typically assigned to the router to access its admin panel?
(A) 8.8.8.8
(B) 192.168.1.1 or 192.168.0.1
(C) 127.0.0.1
(D) 255.255.255.255

98. What is the purpose of a subnet mask in IP networking?
(A) To obscure and completely hide the client IP address from malicious hackers on the internet
(B) To distinguish the network portion from the host portion of an IP address
(C) To systematically encrypt the underlying payload contents of all outgoing data packets
(D) To resolve and translate human-readable internet domain names into numerical IP addresses

99. Find the odd one out among the following network terms.
(A) Subnet Mask
(B) Network ID
(C) Host ID
(D) MAC Address

100. Which of the following pairs of network device and OSI layer is correctly matched?
(A) Switch - Network Layer
(B) Router - Network Layer
(C) Hub - Transport Layer
(D) Modem - Application Layer

101. What is the full form of VPN in computer networking?
(A) Virtual Private Network
(B) Visual Protocol Node
(C) Verified Public Network
(D) Virtual Path Notation

102. What is the primary definition and purpose of a VPN?
(A) A physical subterranean optical fiber cable used to connect two remote corporate buildings securely together
(B) A service that creates a secure, encrypted connection over a less secure network, such as the public internet
(C) A specialized server-side antivirus software program that scans and cleans malware directly from network routers
(D) A centralized distributed database system that stores and maps human-readable domain names to public IP addresses

103. Which of the following is a factual characteristic of using a VPN?
(A) It makes internet connections completely immune to all types of viruses.
(B) It masks the user's real IP address from the destination website.
(C) It increases the speed of internet connections by bypassing ISPs.
(D) It works only on wired Ethernet connections, not on Wi-Fi.

104. The process of encapsulating one network protocol inside another for secure transmission in a VPN is known as:
(A) Packet phishing
(B) Tunneling
(C) IP spoofing
(D) Network pinging

105. Given below are two statements:
Statement I: A VPN allows a remote employee to securely access their company's internal corporate network over the internet.
Statement II: A VPN sends all data in unencrypted plain text to ensure maximum speed.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

106. What is the definition of a port number in computer networking?
(A) A physical hardware socket located on the back panel of a computer unit where networking cables are plugged in
(B) A 16-bit logical construct that identifies a specific process or network service running on a device
(C) The maximum physical bandwidth speed at which data packets travel over a wired or wireless local network link

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(B) 64 bits
(C) 128 bits
(D) 256 bits

52. What is the standard format used to represent an IPv6 address?
(A) Eight groups of hexadecimal numbers separated by colons
(B) Four distinct groups of decimal numbers separated by standard dots
(C) Six groups of hexadecimal numbers separated by horizontal hyphens
(D) Eight groups of binary numbers separated by standard punctuation commas

53. Given below are two statements:
Statement I: An IPv4 address uses 32 bits, allowing for approximately 4.3 billion unique addresses.
Statement II: An IPv6 address uses 128 bits, providing a virtually unlimited number of unique addresses.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

54. Consider the following statements regarding the need for IPv6:
I. The rapid growth of the Internet led to the depletion of available IPv4 addresses.
II. The proliferation of IoT (Internet of Things) devices requires a massive amount of new IP addresses.
III. IPv6 completely replaces physical MAC addresses on local networks.
IV. IPv6 provides better built-in support for security (IPsec) and routing efficiency.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

55. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The transition from IPv4 to IPv6 is necessary to sustain the growth of the internet.
Reason (R): IPv4 addresses have exhausted globally because its 32-bit structure cannot support the billions of new smart devices coming online.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

56. Which character is used to separate the groups of alphanumeric characters in an IPv6 address?
(A) Period (.)
(B) Hyphen (-)
(C) Colon (:)
(D) Semicolon (;)

57. Which of the following is the most appropriate reason for an organization to adopt IPv6 alongside IPv4?
(A) To significantly increase and optimize the transfer download speed of files transmitted over FTP servers
(B) To overcome the limitation of IP address shortage and prepare for future network expansion
(C) To automatically compress heavy high-definition video files during real-time online streaming
(D) To systematically convert all of their interactive dynamic web pages into plain static HTML code

58. Which of the following is NOT a feature or characteristic of IPv6?
(A) It has a 128-bit address space.
(B) It eliminates the need for Network Address Translation (NAT) in most cases.
(C) It uses dotted decimal representation like 2001.0db8.85a3.0000.
(D) It uses alphanumeric characters (0-9 and a-f).

59. Which of the following is a major difference between IPv4 and IPv6 headers?
(A) IPv6 headers are structured to be significantly more complex and variable in total byte length than standard IPv4 headers.
(B) IPv6 has a fixed header length of 40 bytes, simplifying packet processing compared to IPv4.
(C) IPv4 architecture natively includes IPsec encryption by default in its primary header, whereas IPv6 protocols completely omit it.
(D) IPv4 packet headers exclusively utilize hexadecimal notation for processing, while

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(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

118. Which technique does a basic network firewall use to decide whether to allow or block data?
(A) Low-level physical disk formatting and sector partitioning
(B) Packet filtering based on IP addresses and port numbers
(C) Dynamically changing and spoofing the MAC address of the source host
(D) Real-time lossless compressing and decompressing of the data payload

119. In network security, a firewall is primarily intended to protect against which of the following?
(A) Unexpected physical hardware failure or damage of a computer monitor display
(B) Unauthorized access to or from a private network
(C) Accidental permanent deletion of an important operating system file by an employee
(D) Catastrophic loss of unsaved system data resulting directly from sudden power failure

120. Which of the following is a firewall typically unable to do?
(A) Selectively block and drop incoming network traffic originating from specific unauthorized IP addresses
(B) Restrict and filter network access to specific standardized communication port numbers
(C) Prevent a user from inserting an infected USB drive into their computer
(D) Monitor and filter outgoing network connections established by local software applications

121. What is the full form of SSL, an early protocol used for securing web communication?
(A) Secure System Link
(B) Secure Sockets Layer
(C) System Security Layer
(D) Synchronized Socket Link

122. Which modern cryptographic protocol has largely superseded SSL for securing website communication?
(A) IPsec (Internet Protocol Security)
(B) TLS (Transport Layer Security)
(C) WPA2 (Wi-Fi Protected Access 2)
(D) SSH (Secure Shell Protocol)

123. Which of the following statements is correct regarding website security certificates?
(A) An SSL/TLS certificate provides absolute security guarantees ensuring that a website server can never be hacked or compromised
(B) The presence of a padlock icon in a browser's address bar indicates that the connection is encrypted using SSL/TLS.
(C) SSL certificates are legally mandated and strictly required only for public sector government websites and military portals
(D) An SSL certificate systematically changes and maps the host web server's public IP address to an internal private address

124. What is the primary purpose of applying an SSL/TLS certificate to a website?
(A) To automatically optimize and increase the visual graphic rendering resolution of media images and videos published on the public website
(B) To establish an encrypted link between a web server and a browser, protecting sensitive data like passwords and credit card numbers
(C) To dynamically translate all of the website's text content into multiple foreign languages automatically upon loading
(D) To implement strict digital rights protection that stops end users from copying or saving text directly from the web page

125. Which of the following is a factual statement about protocol standardization bodies?
(A) The IEEE organization is exclusively responsible for defining and maintaining all global web markup language HTML standards
(B) The IETF (Internet Engineering Task Force) develops and promotes voluntary Internet standards, particularly the TCP/IP suite.
(C) The W3C global consortium directly manages and assigns all public IPv4 and IPv6 addresses across international Internet registries
(D) The ICANN organization designs and physically manufactures all undersea fiber-optic communication cables for the internet

126. Which organization is primarily responsible for the management of the domain name system (DNS) root zone and IP address allocation globally?

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translates a website's domain name into its corresponding IP address.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

70. Match the Domain Name extensions in List I with their designated purposes in List II:
List I: (Domain Name Extensions)
P. .gov
Q. .edu
R. .org
S. .com
List II: (Designated Purposes)
1. Commercial entities
2. Non-profit organizations
3. Government agencies
4. Educational institutions
(A) P-3, Q-4, R-2, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-3, Q-2, R-4, S-1

71. When a user types a URL into a web browser, what is the first step the browser takes if the IP address is not already in its local cache?
(A) It sends an ICMP ping request directly to the default local gateway router
(B) It queries a DNS server to resolve the domain name.
(C) It establishes a connection to download the website HTML file directly
(D) It establishes an initial TCP handshake connection with the internet service provider

72. Which of the following correctly describes a DNS server?
(A) It is a database that stores mappings between domain names and IP addresses.
(B) It is a wireless physical hardware device used to broadcast high-speed Wi-Fi network signals
(C) It is a specialized network communication protocol used to transfer large files securely
(D) It is a dedicated remote email server responsible for processing and sending outgoing messages

73. In the domain name "www.example.gov.in", what does "in" represent?
(A) A top-level domain for Internet Network
(B) A top-level domain indicating India
(C) An internal server protocol
(D) An internet node

74. Which of the following is NOT a valid Top-Level Domain (TLD)?
(A) .net domain
(B) .info domain
(C) .webpage
(D) .mil domain

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75. Which of the following is the most appropriate result if the DNS server used by your computer goes down?
(A) You will immediately lose all network connectivity and be unable to connect to your local Wi-Fi router
(B) You can still access websites by typing their IP addresses, but not their domain names.
(C) Your client computer operating system will automatically reconfigure and switch to a static IP address
(D) Your network adapter's physical MAC address will be permanently blocked from accessing local resources

76. What is the full form of MAC in MAC address?
(A) Media Access Control
(B) Memory Access Code
(C) Machine Authorization Code
(D) Mobile Access Center

77. What is the standard size of a MAC address?
(A) 16 bits
(B) 32 bits
(C) 48 bits
(D) 128 bits

78. Given below are two statements:
Statement I: An IP address is a logical address that can change when the device moves to a different network.
Statement II: A MAC address is a physical address burned into the network interface card and generally remains fixed.
Which of the following statement(s) is/are correct?
(A) Both Statement I and Statement II are true
(B) Both Statement I and Statement II are false
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

79. What is the primary difference between a MAC address and an IP address in data transmission?
(A) MAC addresses are primarily used to route

135. Which of the following is an INCORRECT step when troubleshooting common networking problems?
(A) Checking if the physical Ethernet cable is securely plugged in.
(B) Rebooting the Wi-Fi router to clear temporary glitches.
(C) Disabling the computer's monitor to increase internet bandwidth.
(D) Using the "ping" command to test connection to the router.

136. If a ping command returns a "Destination Host Unreachable" message, what is the most likely meaning?
(A) The target remote server is responding to network requests far too quickly for the client
(B) The routing path to the destination cannot be found by the local system or router.
(C) The target website's domain name registration has officially expired with the DNS registrar
(D) The destination host computer system has been infected with a malicious network virus

137. Pinging the IP address 127.0.0.1 is specifically done to verify what?
(A) That the physical Ethernet patch cable connected to the network adapter is not broken
(B) That the local computer's TCP/IP network stack is functioning correctly
(C) That the internet service provider's remote DNS domain resolution servers are online
(D) That the wireless security Wi-Fi access password entered by the user is correct

138. Which of the following pairs of command and function is correctly matched?
(A) ping - Traces the exact network path, hop by hop, that a data packet takes through multiple intermediate routers
(B) ipconfig - Displays the IP address, subnet mask, and default gateway on Windows
(C) ftp - Resolves and translates a human-readable domain name into a machine-readable IP network address
(D) http - Secures and encrypts all raw data frame transmissions occurring at the physical layer of the network

139. Find the odd one out from the following networking utilities and protocols.
(A) ipconfig
(B) ping
(C) tracert
(D) HTTP

140. Consider the following statements about basic networking issues:
I. An IP conflict occurs when two devices on the same local network are assigned the same IP address.
II. A DNS resolution failure means the computer cannot translate a domain name to an IP address.
III. If a computer's default gateway is configured incorrectly, it can access local devices but cannot reach the internet.
IV. Unplugging the network cable will change a static IP address to dynamic.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

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35. (C) A company's main web server hosting its public website
Public web servers require permanent static IP addresses to maintain uninterrupted reachability for external clients and external Domain Name System records. If a server address changed dynamically, DNS mappings would become outdated, rendering hosted services temporarily unreachable. Conversely, mobile devices and client workstations connecting to temporary networks rely on dynamic IP addresses managed automatically by central network allocation controllers.

36. (A) Both Statement I and Statement II are true
Public IP addresses must maintain global uniqueness across the public internet to ensure precise routing without packet delivery ambiguity. In contrast, private IP address ranges are reserved specifically for isolated internal networks. Distinct home or corporate networks can reuse identical private address blocks because local Network Address Translation devices isolate internal traffic from external public routing infrastructures.

37. (C) It changes periodically or when the device disconnects and reconnects to the network.
A dynamic IP address is characterized by its variable nature, as it is dynamically leased to connected devices by automated network management services. When devices disconnect or lease durations expire, assigned addresses return to the shared server pool for reallocation. Reconnecting devices frequently receive different numerical addresses, optimizing address utilization without requiring static network entry configurations.

38. (C) MAC Address
A MAC address represents a permanent physical hardware identifier embedded directly into a network interface card by its manufacturer, operating at the data link layer. Conversely, dynamic IP, static IP, and IPv4 addresses represent logical network-layer addresses used to direct packets across routed IP networks, making hardware addresses structurally and functionally distinct from logical network identifiers.

39. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Internet Service Providers assign dynamic IP addresses to residential subscribers to maximize public address pool efficiency. Because available IPv4 addresses are scarce and not all customers maintain active internet sessions simultaneously, dynamic assignment allows ISPs to reassign idle addresses to newly connected subscribers, significantly reducing the total public IP address block requirements for broadband service delivery.

40. (C) An IP address can only contain letters, not numbers.
IP addresses consist fundamentally of numerical values, not exclusively letters. Standard IPv4 addresses use four decimal numbers separated by dots, while modern IPv6 addresses utilize alphanumeric hexadecimal digits along with colons. IP addresses serve to identify host interfaces logically, support internal private and external public routing structures, and exist in standardized IPv4 and IPv6 format specifications worldwide.

41. (B) 32 bits
An IPv4 address utilizes a total binary length of 32 bits, structured into four distinct 8-bit groupings known as octets. This 32-bit architecture provides a theoretical maximum capacity of approximately 4.29 billion unique logical addresses, which formed the foundational addressing standard for routing data packets across host devices throughout the early development of the internet.

42. (A) Dotted decimal notation
IPv4 addresses are standardly formatted in human-readable dotted decimal notation. Under this convention, the 32-bit binary address is divided into four 8-bit octets. Each octet is converted into its decimal equivalent value ranging from 0 to 255, and the four resulting decimal numbers are written sequentially, separated by periods, such as in 192.168.1.1.

43. (B) 255
Each individual section or octet of an IPv4 address comprises exactly 8 binary bits. In binary arithmetic, eight bits set entirely to ones represent the maximum unsigned decimal value of 255. Consequently, numerical values within any valid IPv4 octet must strictly fall within the range from 0 through 255, inclusive, establishing structural validation boundaries.

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packets toward the destination endpoint. Upon arrival, the receiving transport stack utilizes sequence numbers to reconstruct original data streams in correct order, reassembling segmented payloads while handling loss recovery.

9. (A) P-3, Q-1, R-4, S-2
Application and transport protocols serve distinct functions across computer networks. Hypertext Transfer Protocol fetches web resources for browser viewing. File Transfer Protocol manages file upload and download operations between client and server systems. Simple Mail Transfer Protocol routes outgoing electronic mail messages across mail transfer agents. Transmission Control Protocol operates at the transport layer to provide reliable transmission streams.

10. (A) TCP/IP
The TCP/IP suite forms the core architectural framework of modern global inter-networking. Developed to connect heterogeneous computer networks, it defines standardized end-to-end communication rules, logical addressing schemes, packet routing protocols, and transport layer mechanics. Because global Internet infrastructure relies entirely on this open set of protocols, it remains the universal foundational language for transmitting data worldwide.

11. (D) Hyper Text Transfer Protocol
Hyper Text Transfer Protocol represents the foundational application layer standard used for distributed, collaborative, hypermedia information systems on the World Wide Web. Operating primarily on client-server architecture, it governs how web browsers request web pages, multimedia assets, and documents from remote web servers, defining standardized message formats, header fields, and request methods for resource retrieval.

12. (B) Secure
The letter S in the HTTPS acronym signifies Secure, distinguishing encrypted web communication from standard plain-text transfers. Hypertext Transfer Protocol Secure integrates traditional web requests with underlying cryptographic protocols such as Transport Layer Security. This security enhancement ensures that data exchanged between browsers and web servers remains protected against eavesdropping, unauthorized tampering, and man-in-the-middle attacks over untrusted public networks.

13. (A) Both Statement I and Statement II are true
Unencrypted HTTP transfers information as clear text, leaving login credentials, personal details, and sensitive session tokens vulnerable to interception by unauthorized packet sniffers on intermediate network links. To prevent exposure, HTTPS incorporates TLS or SSL encryption protocols. Encryption scrambles data payloads between web browsers and target servers into unreadable ciphertext, ensuring strict confidentiality, data integrity, and authentication.

14. (C) 80
In TCP/IP networking, port 80 is assigned as the standard default logical endpoint for unencrypted HTTP traffic. Web servers listen on this well-known port for incoming plain-text web request connections initiated by client browsers. When users type standard web addresses without specifying alternate ports or security prefixes, browsers automatically attempt connection setups on TCP port 80.

15. (C) Windows
Windows is a commercial graphical operating system designed to manage computer hardware resources and execute application programs, whereas FTP, HTTP, and SMTP are specialized application-layer network communication protocols. Protocols represent standardized sets of operational rules for transferring files, loading web pages, and routing emails across connected systems, making operating system software functionally distinct from protocols.

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16. (A) I, II, and III
File Transfer Protocol is a standard network protocol designed specifically to transfer files reliably between clients and servers across TCP networks. It operates using dual channels, utilizing control port 21 for commands and data port 20 for payload transfers. Because FTP lacks streaming protocols and latency optimizations, it is intended for static document transfers.

17. (D) FTP
Web developers rely on File Transfer Protocol to manage website files stored on remote hosting servers. This specialized protocol provides dedicated capabilities for uploading bulk source

ANSWERS

1. (B) A set of rules and guidelines for communicating data between devices
In computer networking, a protocol represents a formalized set of predefined rules, conventions, and standards that govern how data is formatted, transmitted, received, and processed across distinct system environments. Standardized protocols ensure that diverse hardware architectures and software applications communicate seamlessly without ambiguity, enabling proper data synchronization, formatting, timing, and error handling during electronic data exchanges.

2. (D) Transmission Control Protocol
Transmission Control Protocol represents the full expansion of TCP within the foundational Internet protocol suite. Operating at the transport layer of networking architecture, this reliable protocol establishes virtual end-to-end connections prior to transmitting data streams. It manages packet sequencing, flow control, acknowledgment of received segments, and automatic retransmission of dropped packets to guarantee complete, error-free delivery.

3. (A) I and II only
Network protocols establish essential specifications regarding message formats, timing parameters, and operational sequences to ensure that communicating nodes interpret data streams identically. Because raw physical signals consist only of electrical, optical, or radio states, protocols provide the interpretive rules required to reconstruct meaningful digital payload structures. Furthermore, protocol specifications are frequently implemented in software drivers.

4. (C) To route and address data packets so they can travel across networks and arrive at the correct destination
The primary role of the Internet Protocol within computer networks is providing logical addressing and packet routing across interconnected host systems. Operating at the network layer, it encapsulates transport data into discrete IP datagrams containing source and destination addresses. Intermediate routers inspect these addresses to determine appropriate forwarding paths, enabling packets to traverse multiple distinct subnets.

5. (A) HTML
HyperText Markup Language is a standard client-side markup formatting language used to structure and display web page content within web browsers, rather than a network protocol. By contrast, networking protocols define exact communication mechanics, packet structures, and transfer rules between interconnected systems. Web browsers render documents written in markup code after receiving them over network transports.

6. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Transmission Control Protocol achieves transport reliability by implementing positive acknowledgment with retransmission mechanisms. When host systems exchange network data using this connection-oriented protocol, receiving nodes send acknowledgement signals for all successfully received segments. If sender timers expire before receiving confirmations for specific packets, those unacknowledged segments are automatically retransmitted, ensuring complete data transfer without loss.

7. (B) TCP ensures data is delivered correctly and in order, while IP only handles the addressing and routing.
In the standard network hierarchy, Transmission Control Protocol and Internet Protocol perform complementary functions at distinct architectural layers. The Internet Protocol operates at the network layer, managing host addressing and routing individual connectionless datagrams across intermediate networks. The Transport Control Protocol sits above it, providing reliable, ordered delivery, flow management, error recovery, and byte-stream synchronization.

8. (C) TCP
At the transport layer, Transmission Control Protocol receives unstructured application data streams and divides them into manageable segments assigned sequential byte numbers. During transmission, these segments travel inside

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retrieving mail. Internet Message Access Protocol listens on TCP port 143 for remote mailbox management. Hypertext Transfer Protocol uses TCP port 80 to deliver standard resources.

27. (C) It allows users to view headers and manage emails directly on the server without downloading them fully.
Internet Message Access Protocol offers significant operational advantages over legacy mail protocols by maintaining primary message stores directly on the central mail server. Users can inspect message headers, search text, organize folder structures, and selectively download specific attachments without fetching full message bodies. This centralized management model enables seamless real-time mailbox state synchronization across multiple independent workstation interfaces.

28. (A) Post
In the POP3 protocol acronym, the letter P stands for Post, forming Post Office Protocol version 3. Designed as a digital counterpart to physical postal offices, this client-server protocol allows remote electronic mail clients to connect to mail storage servers, authenticate user credentials, retrieve accumulated mailbox items, and download messages onto local computing hardware for offline viewing.

29. (D) SNMP
Simple Network Management Protocol is designed for monitoring and managing hardware devices like routers, switches, and servers across IP networks, rather than facilitating electronic mail transfer. Conversely, SMTP, IMAP, and POP3 are specialized email protocols that govern message pushing, remote mailbox folder synchronization, and client message downloading within distributed electronic mail architectures across corporate networks.

30. (C) IMAP - Accessing and managing emails on a server
Internet Message Access Protocol is correctly defined by its function of accessing, reading, and managing email messages stored centrally on a mail server. Unlike client protocols that download and clear server mail, IMAP allows multiple computing devices to interact with server mailbox folders simultaneously, maintaining synchronized message statuses, read states, and custom directory structures directly on the host.

31. (B) A unique numerical label assigned to every device connected to a computer network that uses the Internet Protocol
An IP address is a standardized logical numerical address assigned to networking devices connected within an Internet Protocol infrastructure. Serving both network interface identification and location addressing roles, this logical address enables routers to direct data packets accurately across interconnected local and global networks, ensuring data transmitted across digital communication channels reaches its intended destination host system.

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32. (A) Dynamic Host Configuration Protocol
Dynamic Host Configuration Protocol is a network management standard operating at the application layer to automate logical IP addressing. When client computers, mobile phones, or network hardware join a network, DHCP servers automatically assign available IP addresses, subnet masks, default gateways, and DNS configuration parameters, eliminating manual administrative address assignment and preventing duplicate network configuration conflicts.

33. (D) A DHCP Server
Dynamic IP addresses are automatically assigned to connecting client hosts by dedicated Dynamic Host Configuration Protocol servers embedded in local routers or enterprise network platforms. Upon detecting new device connection requests, the DHCP service leasing engine selects available numerical addresses from a predefined network pool and issues temporary leases alongside default network gateways, subnet masks, and primary server settings.

34. (A) I, II, and III
Static IP addresses are permanently configured logical values that remain fixed over time, making them suitable for infrastructure components such as web servers and mail gateways. Dynamic IP addresses are temporary leased allocations managed automatically by DHCP servers for connected end-user devices, eliminating the requirement for manual network configuration on individual client workstations across local network setups.

code, graphics, and database backups from local workstations to remote directory structures. With support for directory creation, file permission management, and binary data transfers, it serves as a standard tool.

18. (B) A method of logging into an FTP server without a specific user account or password
Anonymous FTP is a network configuration that grants public access to files on a remote server without requiring users to possess customized login accounts or secret passwords. Users connect by entering anonymous as the username and typically providing an email address as a placeholder password. This mechanism is frequently deployed on public archives to distribute software updates.

19. (D) It operates by default on port 80.
Hypertext Transfer Protocol Secure operates by default over TCP port 443, leaving TCP port 80 for unencrypted HTTP communication. HTTPS relies on valid SSL/TLS certificates to authenticate web server identities and establish end-to-end cryptographic tunnels. This layer of security protects data integrity and user confidentiality, making it essential for financial transactions, e-commerce platforms, and web applications.

20. (A) TLS/SSL
Transport Layer Security and its predecessor, Secure Sockets Layer, provide the cryptographic foundation for secure web browsing over HTTPS. When web browsers initiate encrypted address connections, these protocols establish asymmetric handshake procedures to authenticate server identities and negotiate symmetric keys. Subsequent HTTP requests and responses travel encapsulated within this encrypted session, safeguarding sensitive data against packet inspection.

21. (C) Simple Mail Transfer Protocol
Simple Mail Transfer Protocol represents the standard application-layer protocol utilized for sending and routing electronic mail messages across computer networks. Operating over TCP, it establishes reliable communication channels between client email applications and mail transfer agents, as well as between intermediate mail servers. It defines standardized commands for specifying sender identities, message recipients, and content formatting.

22. (D) SMTP
Simple Mail Transfer Protocol serves exclusively as a push protocol responsible for transferring outgoing email messages from client applications to mail servers, as well as relaying mail between destination servers. Unlike retrieve protocols designed for client inbox synchronization, this protocol handles message queuing, envelope addressing, and server hop relays, ensuring that outgoing electronic messages travel reliably.

23. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Internet Message Access Protocol is preferred for multi-device email management because message repositories remain centralized on the server host. When clients modify, organize, or view emails via IMAP, state changes synchronize across all connected endpoint devices. Conversely, Post Office Protocol version 3 historically downloads messages to local single-device storage and purges server copies, preventing seamless synchronization across endpoints.

24. (B) To retrieve and download emails from a mail server to a local client
Post Office Protocol version 3 operates as an application-layer pull protocol designed specifically to download stored electronic mail from remote mail servers to local client applications. Upon establishing connection and verifying user credentials, it retrieves inbox contents to local device storage, typically removing remote copies from the server. This offline model allows users to read stored messages.

25. (A) I and II only
In email architecture, Simple Mail Transfer Protocol pushes outgoing messages from clients to servers, while Post Office Protocol pulls stored emails down to client devices. Conversely, Internet Message Access Protocol maintains full folder organization and message state synchronization on the central server, enabling flexible remote mailbox management across multiple client interfaces rather than restricting server folder creation.

26. (A) P-3, Q-4, R-1, S-2
Network protocols utilize specific standard port assignments for unencrypted communication. Simple Mail Transfer Protocol communicates on TCP port 25 for server message delivery. Post Office Protocol version 3 uses TCP port 110 for

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44. (C) 192.168.300.5
An IPv4 address is formatted as four decimal octets separated by dots, where each individual octet represents an 8-bit byte with a maximum permissible value of 255. In the address 192.168.300.5, the third octet contains the value 300, which exceeds the valid 8-bit range limit of 255, rendering the complete address structure invalid.

45. (A) I and II only
An IPv4 address contains 32 bits divided into four distinct 8-bit binary sections known as octets. Each octet stores a byte of network address information converted into a decimal value between 0 and 255. In standard notation, these four octet values are separated strictly by periods, rather than commas, forming conventional dotted-decimal network address representations.

46. (A) P-2, Q-4, R-1, S-3
Classful IPv4 addressing categorizes networks based on first octet ranges. Class A addresses range from 1 to 126 for large networks. Class B addresses span 128 to 191 for medium-sized networks. Class C covers 192 to 223 for small local networks. Class D ranges from 224 to 239 and is reserved for multicast communication streams.

47. (B) Network ID and Host ID
An IPv4 address is functionally split into two principal structural components: the Network ID and the Host ID. The Network ID identifies the specific logical subnetwork to which a device belongs, enabling routers to direct packets between networks. The Host ID identifies the individual host device connected on that specific subnetwork, allowing local delivery.

48. (B) 255.0.0.0, 255.255.0.0, 255.255.255.0
Default subnet masks define boundary splits between network and host portions in classful addressing architectures. Class A utilizes 255.0.0.0, allocating one octet to network identity and three to host devices. Class B uses 255.255.0.0, splitting bits equally between network and host parts. Class C employs 255.255.255.0, designating three octets for network identification and one for host endpoints.

49. (C) 127.0.0.1
The IP address 127.0.0.1 represents the standard IPv4 loopback address assigned to the local host interface. Operating within the reserved 127.0.0.0/8 block, this logical loopback address enables network software and diagnostics tools to send traffic directly back to the local computer's internal protocol stack, testing IP software functionality without sending data over physical connections.

50. (C) Class C
The IP address 192.168.1.1 falls into the standard Class C IPv4 address category, which encompasses all addresses with first octets between 192 and 223. Commonly assigned to local router interfaces, Class C networks default to a 24-bit network prefix, making them well suited for smaller local area networks containing up to 254 unique host connections.

51. (C) 128 bits
An IPv6 address utilizes a 128-bit address length, expanding available network identification space compared to 32-bit IPv4 structures. This massive 128-bit architecture provides approximately 3.4 x 10^38 unique global addresses, accommodating the rapid growth of connected consumer devices, IoT expansion, and modern mobile network infrastructure worldwide without requiring address conservation mechanisms.

52. (A) Eight groups of hexadecimal numbers separated by colons
Standard IPv6 address representation uses eight distinct 16-bit blocks formatted as hexadecimal numbers, separated by colons. Each group contains four hexadecimal digits representing a 16-bit value, such as 2001:0db8:85a3:0000:0000:8a2e:0370:7334. This standardized format accommodates the expanded 128-bit total address length efficiently, while allowing shorthand notation rules to condense repeating zero blocks during administration.

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53. (A) Both Statement I and Statement II are true
The 32-bit structure of IPv4 accommodates approximately 4.3 billion unique numerical addresses, which proved insufficient as internet usage expanded globally. To resolve address depletion, IPv6 was developed using a 128-bit address architecture. This expanded bit length supplies a virtually unlimited pool of unique addresses, catering to billions of modern

Operating within a global hierarchical network of root, top-level domain, and authoritative servers, DNS servers process client resolution queries, translating hostnames into network addresses to allow browser applications to establish direct network connectivity.

73. (B) A top-level domain indicating India
In the domain structure www.example.gov.in, the suffix "in" represents a country code top-level domain designated specifically for India. Delegated under international internet naming standards, country code top-level domains indicate geographic or national affiliation, allowing organizations, educational institutions, and government bodies within specific regions to establish localized domain presence across global networks.

74. (C) .webpage
The extension .webpage is not an officially recognized top-level domain managed by ICANN. Conversely, .net, .info, and .mil represent valid generic and restricted top-level domains established within global DNS infrastructure to categorize networks, general informational websites, and official military installations respectively across international computer network domains.

75. (B) You can still access websites by typing their IP addresses, but not their domain names.
If configured DNS servers become unavailable, the host computer loses automated domain name resolution services. Consequently, typing human-readable domain names into web browsers will fail because the browser cannot resolve names into destination IP addresses. However, entering numerical IP addresses directly into browser address bars bypasses DNS lookups, successfully connecting to web servers.

76. (A) Media Access Control
Media Access Control represents the full expansion of MAC in MAC address terminology. Functioning as a unique physical identifier assigned to a network interface controller during manufacturing, a MAC address operates at the data link layer of the OSI model, enabling local hardware address identification and frame delivery within ethernet and wireless local networks.

77. (C) 48 bits
A standard MAC address comprises a binary length of 48 bits, typically formatted as twelve hexadecimal digits separated by colons or hyphens into six two-digit pairs. The initial 24 bits represent the Organizationally Unique Identifier designated for the manufacturer, while the remaining 24 bits form a unique extension assigned to individual physical network cards.

78. (A) Both Statement I and Statement II are true
An IP address functions as a logical network layer address that changes depending on the host device's network location. In contrast, a MAC address serves as a permanent physical address burned into the network interface card during manufacturing, operating at the data link layer to uniquely identify hardware devices on local network segments.

79. (B) MAC addresses ensure data reaches the correct physical device on a local network, while IP addresses route data between different networks.
MAC addresses and IP addresses serve distinct operational roles at different OSI layers. MAC addresses operate at the data link layer to deliver local Ethernet frames between physical devices within a single local area network segment. Conversely, IP addresses operate at the network layer, providing logical addressing used by routers to forward packets across distinct subnets worldwide.

80. (A) I and II only
A MAC address is assigned by the manufacturer of the Network Interface Card and features a 48-bit structure where the first 24 bits represent the Organizationally Unique Identifier. Because MAC addresses lack hierarchical routing structures, they operate strictly within local data link segments and cannot be routed across the public internet by network routers.

81. (B) 00:1A:2B:3C:4D:5E
The string 00:1A:2B:3C:4D:5E represents the standard format of a 48-bit MAC address, consisting of six pairs of hexadecimal digits separated by colons. The first three octets represent the manufacturer's Organizationally Unique Identifier, while the final three octets represent the specific network interface controller hardware serial assigned during physical manufacturing.

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63. (B) I and III only
Public IP addresses must maintain global uniqueness across the internet to ensure unambiguous packet routing to destination hosts. They are assigned by authorized Internet Registries through Internet Service Providers, rather than being selected independently by users. Public IP addresses are required for public web servers and internet-facing services to be directly accessible to external network clients.

64. (B) IANA (Internet Assigned Numbers Authority)
The Internet Assigned Numbers Authority is the global entity responsible for coordinating IP address allocation, autonomous system numbers, root zone management in the Domain Name System, and media type designations. Operating under ICANN oversight, IANA allocates large blocks of IP addresses to Regional Internet Registries, which subsequently assign address spaces to service providers globally.

65. (D) Statement I is false but Statement II is true
Private IP addresses are non-routable across the global public internet to prevent address collisions and conserve public IP space. To provide internet access to internal networks, Network Address Translation translates private internal source IP addresses into a shared, globally unique public IP address on the perimeter gateway router, allowing multiple internal hosts outward connectivity.

66. (A) 8.8.8.8
The IP address 8.8.8.8 is a globally routable public IP address managed by Google for public DNS resolution. Conversely, 10.5.5.5, 172.16.1.1, and 192.168.1.100 belong to RFC 1918 designated private IP address blocks (Class A, Class B, and Class C respectively), which are used for internal network addressing and are non-routable publicly.

67. (B) Domain Name System
Domain Name System represents the complete expansion of DNS within computer networking context. Operating as a decentralized hierarchical database system across the global internet, DNS maps human-friendly domain names to numerical IP addresses required by network protocols, enabling users to access remote web servers and internet applications without memorizing complex IP address strings.

68. (B) To convert human-readable domain names (like www.google.com) into machine-readable IP addresses
The fundamental purpose of the Domain Name System is resolving human-readable domain names into machine-readable numerical IP addresses. When users enter web addresses into browsers, DNS servers locate corresponding IP mappings across hierarchical database records, enabling network protocols to establish underlying TCP connections and route traffic to target destination server hosts efficiently across global infrastructure.

69. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
The Domain Name System is commonly called the phonebook of the internet because it performs name-to-address translation. Just as physical phonebooks map personal names to telephone numbers, DNS translates user-friendly website domain names into numerical IP addresses, allowing client software to establish network connections without requiring users to memorize complex IP configurations.

70. (A) P-3, Q-4, R-2, S-1
Top-level domain extensions categorize websites based on organizational purpose. The .gov extension is reserved for government agencies. The .edu domain identifies accredited educational institutions. The .org extension historically serves non-profit organizations and open communities. The .com domain represents commercial businesses and entities, forming the most common generic top-level domain across internet infrastructure.

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71. (B) It queries a DNS server to resolve the domain name.
When users enter a URL into a browser and local cache checks yield no saved records, the browser initiates a DNS lookup query to resolve the domain name into an IP address. By contacting configured recursive DNS servers, the browser acquires the destination host's numerical IP address required to open TCP connections and fetch web content.

72. (A) It is a database that stores mappings between domain names and IP addresses.
A DNS server operates as a specialized database host that maintains mappings between domain names and corresponding IP addresses.

computing devices and networked appliances worldwide.

54. (B) I, II, and IV
Transitioning to IPv6 address architecture addresses public IPv4 depletion and supports massive internet growth across emerging IoT deployments. IPv6 includes structural enhancements, including mandatory IPsec integration and streamlined header processing for improved routing efficiency. However, IPv6 operates strictly at the network layer and does not replace data link layer physical MAC addresses required for local frame delivery.

55. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Global internet expansion required transitioning to IPv6 because legacy IPv4 address pools reached total allocation exhaustion. The limited 32-bit architecture of IPv4 provides only 4.3 billion addresses, which cannot support billions of connected mobile phones, IoT sensors, and computer systems. IPv6 expands address length to 128 bits, providing sufficient address space to sustain long-term internet growth.

56. (C) Colon (:)
In standard IPv6 address formatting, the colon character is strictly used to separate eight groups of four hexadecimal digits. Unlike IPv4 addresses that use periods between four decimal octets, IPv6 relies on colons to structure 128-bit binary strings into human-readable hexadecimal blocks, providing visual clarity and supporting standardized address condensation conventions.

57. (B) To overcome the limitation of IP address shortage and prepare for future network expansion
Organizations adopt IPv6 alongside existing IPv4 deployments primarily to resolve public IP address exhaustion and ensure long-term network scalability. With billions of new computing, mobile, and IoT devices requiring global internet connectivity, IPv6 provides an vast address space, enabling enterprises to assign globally unique IP addresses to endpoints without relying on complex network translation workarounds.

58. (C) It uses dotted decimal representation like 2001.0db8.85a3.0000.
IPv6 addresses do not use dotted decimal notation or period delimiters. Instead, IPv6 employs hexadecimal notation structured as eight groups separated by colons. Characterized by its 128-bit address length, IPv6 incorporates alphanumeric characters from 0 to 9 and a to f, while restoring direct end-to-end connectivity by drastically reducing dependence on Network Address Translation mechanisms.

59. (B) IPv6 has a fixed header length of 40 bytes, simplifying packet processing compared to IPv4.
A major architectural difference between IPv4 and IPv6 lies in their header design. IPv6 features a fixed header length of 40 bytes, eliminating variable-length optional fields found in IPv4 headers. This fixed-size structure enables intermediate routers to process and forward network packets rapidly without calculating variable header lengths, significantly boosting overall routing throughput and performance.

60. (A) Network Address Translation
Network Address Translation represents the complete expansion of NAT. It is a critical network technology deployed on routers and firewalls that translates private internal IP addresses into public IP addresses during internet communication. By enabling multiple internal network devices to share a single public IP address, NAT significantly slowed public IPv4 address pool exhaustion worldwide.

61. (B) An IP address reserved for internal use behind a router or firewall, not routable on the public internet
A private IP address is an address selected from specific ranges reserved exclusively for local network usage behind routers or firewalls. Because these addresses are non-routable over the public internet, internal host devices use them to communicate within local networks, relying on Network Address Translation devices to bridge local traffic to external public internet destinations.

62. (B) 192.168.0.0 to 192.168.255.255
The address block spanning 192.168.0.0 through 192.168.255.255 represents a designated private IPv4 address range specified by RFC 1918 for Class C networks. These non-routable private addresses are deployed across residential home routers and internal local area networks, allowing connected endpoints to exchange local traffic without consuming scarce public IP allocations.

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82. (C) Switch
A network switch operates at the Data Link layer (Layer 2) of the OSI model, utilizing MAC addresses to forward data frames selectively to destination devices. By maintaining an internal MAC address table that maps physical addresses to specific network ports, switches eliminate unnecessary packet flooding, delivering targeted local network traffic efficiently within local area networks.

83. (C) It changes automatically every time the computer is restarted.
A MAC address is a permanent hardware address burned directly into the physical Network Interface Card during manufacturing, meaning it remains static across device restarts. Functioning at Layer 2 of the OSI model, it consists of 12 hexadecimal digits formatted into six byte blocks, providing persistent physical device identification within local networking environments.

84. (A) II, III, I
Organizing network concepts by OSI model layers from lowest to highest begins with the MAC address operating at the Data Link layer (Layer 2). The IP address operates at the Network layer (Layer 3) to handle logical addressing and routing. Finally, the HTTP protocol operates at the Application layer (Layer 7) to deliver web communications.

85. (C) Logical Address
A logical address, commonly known as an IP address, is assigned via software protocols and changes depending on network topology. In contrast, hardware address, physical address, and MAC address are synonymous terms that describe the permanent, manufacturer-assigned 48-bit identifier burned into a device's physical Network Interface Card for local data link operations.

86. (B) The practice of dividing a single large network into smaller, manageable logical sub-networks
Subnetting is the architectural practice of logically dividing a single large IP network address space into multiple smaller, independent sub-networks called subnets. By applying customized subnet masks, network administrators restrict broadcast domains, improve routing efficiency, optimize IP address allocation, and implement granular security boundaries across distinct department networks within an organization.

87. (B) To improve network performance, reduce broadcast traffic, and enhance security
Implementing subnetting in corporate networks provides significant administrative and performance advantages. Dividing large networks into smaller subnets confines broadcast traffic within localized subnetwork boundaries, preventing network congestion. Additionally, subnetting enhances security by enabling administrators to deploy firewalls and access control policies between subnets, isolating sensitive internal corporate departments from general network traffic.

88. (B) The IP address of the router interface that connects the local network to outside networks like the Internet
A default gateway is the logical IP address of a local router interface that serves as an exit point for network traffic destined outside the local subnet. When host devices generate packets addressed to external networks or the internet, they forward these packets to the default gateway address for outbound routing across intermediate networks.

89. (A) I, II, and III
Routers operate at the Network Layer (Layer 3) of the OSI model, inspecting destination IP addresses within packet headers to determine forward routing paths across interconnected subnets. However, routers do not use MAC addresses for inter-network internet routing; MAC addresses function exclusively at Layer 2 to deliver frames locally across single physical network segments.

90. (C) Network Layer
The Network Layer, designated as Layer 3 in the Open Systems Interconnection model, is responsible for end-to-end logical addressing, packet fragmentation, and inter-network routing. Protocols operating at this layer, such as IPv4 and IPv6, utilize logical IP addresses to direct data packets across complex network topologies, bridging multiple physical subnets from source to destination.

91. (A) Both Statement I and Statement II are true
Network switches and routers perform distinct roles within network architectures. A switch

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22. In the context of digital payments in India using smartphones, what is the full form of UPI?
(A) Universal Payment Integration
(B) United Public Interface
(C) Unique Payment Identification
(D) Unified Payments Interface

23. Staring at digital gadget screens for long periods can cause eye strain. Which built-in software feature helps reduce this effect, especially at night?
(A) Automatic screen rotation toggle
(B) Blue light filter
(C) Offline airplane mode setting
(D) High-contrast display text

24. Most modern portable IT gadgets, including laptops and smartphones, are powered by which type of rechargeable battery?
(A) Nickel-Cadmium (NiCd)
(B) Lead-Acid
(C) Lithium-ion (Li-ion)
(D) Alkaline

25. Match the gadget sensors in List I with their primary function in List II.
List I: (Gadget Sensor)
P. GPS
Q. Accelerometer
R. Ambient Light Sensor
S. Heart Rate Monitor
List II: (Primary Function)
1. Detects device orientation and motion
2. Measures pulse and blood flow changes
3. Adjusts screen brightness based on surroundings
4. Determines geographic location
(A) P-4, Q-1, R-3, S-2
(B) P-1, Q-4, R-2, S-3
(C) P-4, Q-3, R-1, S-2
(D) P-3, Q-1, R-4, S-2

26. Which of the following is a biometric security feature commonly used to unlock modern smartphones and tablets?
(A) Fingerprint scanner
(B) 4-digit PIN
(C) Swipe pattern
(D) Alphanumeric password

27. When purchasing a laptop, if a user wants faster boot times and quicker application loading, which type of storage drive should they prefer?
(A) Mechanical Hard Disk Drive
(B) Solid State Drive
(C) Optical CD-ROM drive
(D) Magnetic Floppy Disk

28. What is a defining physical characteristic of the latest trend in "foldable" smartphones?
(A) They use two completely separate glass screens with a thick plastic hinge in the middle
(B) They feature a single flexible OLED display that bends
(C) They lack a battery and draw power from solar energy
(D) They fold using a sliding physical keyboard

29. In IT gadget terminology, what does the general term "wearable" refer to?
(A) An electronic device worn on the body
(B) A protective silicone cover case designed for smartphones
(C) A software mobile application that tracks consumer fashion trends
(D) A heavy hardware component used inside desktop computers

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30. Select the correct sequence of wireless connectivity technologies arranged in ascending order of their typical maximum range.
(A) Bluetooth, NFC, Wi-Fi
(B) NFC, Bluetooth, Wi-Fi
(C) Wi-Fi, Bluetooth, NFC
(D) NFC, Wi-Fi, Bluetooth

31. Which of the following is considered an example of a smart home device?
(A) A traditional ceiling fan controlled by a wall regulator
(B) A standard mechanical door lock
(C) A manual hand-crank flashlight
(D) A Wi-Fi enabled smart plug

32. A power bank with a capacity of 10000 mAh is typically used for what purpose?
(A) Jump-starting a dead heavy-duty car engine
(B) Powering a high-performance desktop computer during power blackouts
(C) Recharging mobile devices on the go
(D) Cooling down an overheated gaming laptop with internal fans

33. Which wireless technology is generally used for pairing a smartphone directly with a smart TV to mirror the phone's screen?
(A) Near Field Communication
(B) Wi-Fi Direct

101. (A) Virtual Private Network
Virtual Private Network represents the complete expansion of the abbreviation VPN in network communications. Designed to extend private network capabilities across public infrastructure, a VPN establishes secure, encrypted communication tunnels over untrusted networks such as the internet, protecting data privacy, verifying host authenticity, and masking physical location details during remote network transmissions.

102. (B) A service that creates a secure, encrypted connection over a less secure network, such as the public internet
A Virtual Private Network is a technology that creates an encrypted, private communication tunnel over less secure public networks like the internet. By encrypting transmitted data packets and routing traffic through remote VPN servers, it prevents unauthorized third parties from inspecting data transfers, securing corporate remote connections and protecting user privacy across public Wi-Fi networks.

103. (B) It masks the user's real IP address from the destination website.
A factual characteristic of using a VPN is that it masks a user's actual IP address from destination websites by routing internet traffic through intermediate VPN servers. Consequently, external web servers observe the IP address assigned to the VPN endpoint rather than the user's real public IP, enhancing personal privacy and geographic location privacy online.

104. (B) Tunneling
Tunneling is the networking process of encapsulating an entire network data packet inside the payload field of another protocol packet for secure transmission. In VPN architectures, tunneling protocols wrap original private data packets within encrypted outer carrier protocols, enabling sensitive corporate and user traffic to travel securely across public, untrusted internet networks without exposure.

105. (C) Statement I is true but Statement II is false
A Virtual Private Network enables remote workers to establish secure connections to internal enterprise resources over public internet connections. To achieve this security, VPN protocols apply strong cryptographic encryption to all transmitted data payloads, rather than sending unencrypted plain text, protecting sensitive corporate communications from eavesdropping, packet interception, and unauthorized data tampering.

106. (B) A 16-bit logical construct that identifies a specific process or network service running on a device
In computer networking, a port number is a 16-bit numerical logical construct used at the transport layer to identify specific processes or application services running on a host device. Ranging from 0 to 65535, port numbers enable operating systems to multiplex concurrent network connections, directing incoming data packets to correct receiving software applications.

107. (D) 443
Port 443 is designated as the standard default logical port for Hypertext Transfer Protocol Secure communications. Operating over TCP, port 443 handles encrypted web traffic protected by TLS or SSL protocols. When browsers initiate secure connections using https:// URLs, network packets target port 443 on web servers, establishing encrypted transmission channels for sensitive data exchanges.

108. (A) SMTP - Port 25
Simple Mail Transfer Protocol is correctly paired with TCP port 25, which serves as the standard well-known port for routing outgoing electronic mail between mail transfer agents. In contrast, HTTP defaults to port 80, FTP utilizes port 21 for command controls, and HTTPS operates over secure port 443 across TCP/IP networks.

109. (C) 65,535
The TCP/IP suite provides a total of 65,535 logical port numbers for both TCP and UDP transport protocols. Structured as a 16-bit unsigned integer field within transport layer headers, port numbers range from 1 through 65,535 (with 0 reserved), allowing host operating systems to run thousands of distinct network applications and services simultaneously.

110. (A) SMTP - 443
The mapping of SMTP to port 443 is incorrect, as Simple Mail Transfer Protocol standardly operates over TCP port 25 for server-to-server mail relays (and port 587 for mail submission), while port 443 is strictly assigned to HTTPS traffic. The other listed mappings—FTP on 21,

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CHAPTER 07
IT Gadgets and Applications

1. Which of the following best defines an IT gadget in the context of consumer technology?
(A) A large industrial machine used for manufacturing
(B) A small, portable electronic device with a specific practical function
(C) A purely mechanical tool requiring manual operation
(D) A software program used for server administration

2. What is the primary input technology used in modern smartphone displays?
(A) Physical QWERTY keyboard
(B) Resistive touchscreen operated by a heavy stylus
(C) Voice commands only
(D) Capacitive touchscreen operated by fingers

3. Which of the following devices typically features a screen size between 7 and 12 inches and is operated primarily via a touchscreen without an attached physical keyboard?
(A) Tablet
(B) Desktop computer
(C) Notebook
(D) Smartwatch

4. How does a notebook computer primarily differ from a traditional desktop computer?
(A) It lacks an operating system
(B) It requires a continuous connection to a wall power outlet
(C) It integrates a screen, keyboard, and battery for portability
(D) It cannot connect to the internet

5. In the context of smartphone connectivity, what is the full form of NFC?
(A) Near Field Communication
(B) Network File Configuration
(C) Node Frequency Control
(D) National Frequency Channel

6. Smartwatches track a user's physical steps primarily using which built-in sensor?
(A) Thermometer
(B) Barometer
(C) Proximity sensor
(D) Accelerometer

7. The main purpose of a fitness band is to:
(A) Produce physical prints of digital photographs
(B) Track health metrics and physical activity
(C) Project video content directly onto a flat wall
(D) Serve as a primary system for software coding

8. Which wireless technology is primarily used to connect true wireless earbuds to a smartphone?
(A) Infrared
(B) Ethernet
(C) Bluetooth
(D) Broadband

9. The electrical capacity of a power bank is generally measured and advertised in which unit?
(A) Gigahertz (GHz)
(B) Megabytes (MB)
(C) Revolutions per minute (RPM)
(D) Milliampere-hour (mAh)

10. Consider the following statements regarding smart home devices:
I. A smart plug allows remote control of standard electrical appliances via an app.
II. Smart home devices typically connect to a local Wi-Fi network.
III. Smart bulbs can only be operated using a physical wall switch.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

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11. Action cameras, such as a GoPro, are specifically designed for which primary purpose?
(A) Scan commercial barcode labels at retail supermarket counters
(B) Capture high-speed sports and outdoor

120. (C) Prevent a user from inserting an infected USB drive into their computer
Network firewalls inspect and filter network traffic passing through network interfaces and logical ports. They cannot prevent physical security breaches, such as a user inserting an infected USB flash drive directly into a host computer's physical hardware port. USB malware vectors bypass network perimeters entirely, requiring endpoint antivirus protection and physical security policies for mitigation.

121. (B) Secure Sockets Layer
Secure Sockets Layer represents the complete expansion of the SSL acronym. Standardized as an early cryptographic protocol operating above the transport layer, SSL provided endpoint authentication and data encryption for web traffic. Although superseded by modern Transport Layer Security, SSL established the foundational mechanics for securing sensitive web communications over public internet infrastructures.

122. (B) TLS (Transport Layer Security)
Transport Layer Security is the modern cryptographic protocol that has superseded legacy Secure Sockets Layer protocols for securing network communications. TLS provides enhanced encryption algorithms, stronger handshake authentication, and robust message integrity checks, securing HTTPS web browsing, email transfers, and virtual private network connections across global internet infrastructures against eavesdropping and data tampering.

123. (B) The presence of a padlock icon in a browser's address bar indicates that the connection is encrypted using SSL/TLS.
A visual padlock icon displayed in a web browser's address bar signifies that the connection to the web server is encrypted using a valid SSL/TLS certificate. This certificate authenticates the domain identity and establishes encrypted communication tunnels over HTTPS, protecting data exchanged between client browsers and server host systems against third-party interception.

124. (B) To establish an encrypted link between a web server and a browser, protecting sensitive data like passwords and credit card numbers
Installing an SSL/TLS certificate on a web server establishes an encrypted communication link between the server and connecting web browsers. Cryptographic encryption scrambles transmitted data payloads, ensuring sensitive user information such as login credentials, personal identification details, and online payment card numbers remain protected from eavesdropping and interceptive tampering across intermediate networks.

125. (B) The IETF (Internet Engineering Task Force) develops and promotes voluntary Internet standards, particularly the TCP/IP suite.
The Internet Engineering Task Force is an international open standards organization responsible for developing and promoting voluntary Internet protocols and architectures. Operating through working groups and issuing Requests for Comments (RFCs), the IETF defines core technical specifications that govern the Internet protocol suite, including TCP, IP, routing protocols, and transport security standards worldwide.

126. (B) ICANN (Internet Corporation for Assigned Names and Numbers)
The Internet Corporation for Assigned Names and Numbers is the non-profit organization responsible for coordinating global domain name system root zone management, IP address space allocation, and protocol identifier assignments. Through oversight of IANA function execution, ICANN maintains operational stability, security, and global interoperability across international domain registries and internet addressing systems.

127. (B) ipconfig
In Windows operating systems, "ipconfig" is the standard Command Prompt command utility used to display active network interface details. Executing this command displays local IPv4 and IPv6 addresses, subnet masks, default gateways, and physical MAC addresses, assisting network administrators and end users in diagnosing local connectivity issues and configuration parameters.

128. (A) Both Statement I and Statement II are true
Command-line utilities provide essential network configuration details across operating system platforms. In Microsoft Windows environments, the "ipconfig" utility displays IP addresses, default gateways, and subnets. Similarly, in traditional Linux and Unix distributions, the "ifconfig" command line tool serves an

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operates at the data link layer to connect multiple host devices within a single local area network, forwarding frames using MAC addresses. Conversely, a router operates at the network layer to connect disparate networks together, forwarding data packets using logical IP addresses.

92. (B) Service Set Identifier
Service Set Identifier represents the complete expansion of SSID in wireless networking. Functioning as a human-readable sequence of alphanumeric characters up to 32 octets long, an SSID serves as the unique public name for a wireless local area network, allowing client smartphones and laptops to identify and select specific Wi-Fi access points.

93. (B) Through a DHCP service running on the home Wi-Fi router
When a smartphone connects to a home Wi-Fi network, it obtains its IP address automatically via Dynamic Host Configuration Protocol services embedded within the local router. Upon establishing a wireless connection, the phone issues a DHCP request, prompting the router to lease an available local private IP address alongside gateway and DNS configurations.

94. (B) The router acts as a DHCP server to automatically assign local IP addresses to connected devices.
In a typical home network setup, the wireless router incorporates integrated DHCP server functionality. When personal computers, smartphones, or smart home appliances connect via Wi-Fi or Ethernet cables, the router's internal DHCP service automatically allocates local private IP addresses, default gateway details, and DNS server settings, enabling effortless communication without manual static IP assignment.

95. (A) P-4, Q-3, R-1, S-2
Network devices serve specialized functions within network infrastructure. Routers forward packets between distinct networks using logical IP addresses. Switches connect local devices within a LAN using physical MAC addresses. Modems convert digital signal data into analog formats for telecommunication transmission. Access points provide wireless Wi-Fi connectivity, bridging radio signals to wired Ethernet network infrastructures.

96. (D) Storing backup copies of user hard drives
Network routers are designed for data packet routing, logical IP address assignment via DHCP, Network Address Translation, and perimeter traffic filtering through firewalls. Storage operations, such as creating and maintaining full backup copies of user hard drives, require dedicated storage systems such as Network-Attached Storage devices or cloud servers, rather than packet-forwarding router hardware.

97. (B) 192.168.1.1 or 192.168.0.1
Home router manufacturers typically assign private IP addresses like 192.168.1.1 or 192.168.0.1 as the default gateway address for accessing administrative control panels. Web browsers connecting to these local addresses load administrative web interfaces, allowing users to configure Wi-Fi passwords, security settings, DHCP lease scopes, and WAN connection parameters within their local networks.

98. (B) To distinguish the network portion from the host portion of an IP address
A subnet mask is a 32-bit binary sequence used in IP networking to separate an IP address into its constituent network portion and host portion. By performing a bitwise AND operation between an IP address and its corresponding subnet mask, network devices determine whether a target destination resides on the local subnet or requires gateway routing.

99. (D) MAC Address
Subnet mask, network ID, and host ID are interrelated components of logical Layer 3 IPv4 addressing used to define subnetwork structures and route data packets across networks. In contrast, a MAC address is a permanent Layer 2 physical hardware identifier assigned to a network interface controller, functioning independently of logical IP subnetwork masking schemes.

100. (B) Router - Network Layer
A router is correctly matched with the Network Layer (Layer 3) of the OSI model. Routers analyze packet header IP addresses at Layer 3 to make intelligent routing decisions, forwarding data across interconnected subnets. In contrast, switches operate primarily at the Data Link layer, hubs operate at the Physical layer, and modems handle physical line modulation.

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138. (B) ipconfig - Displays the IP address, subnet mask, and default gateway on Windows
The utility "ipconfig" is correctly matched with its function of displaying active network configuration parameters—including local IP addresses, subnet masks, and default gateways—on Windows operating systems. Conversely, "ping" measures latency rather than tracing hops (which is done by tracert), "ftp" transfers files rather than resolving DNS, and "http" operates at Layer 7.

139. (D) HTTP
HTTP represents an application-layer protocol used for requesting and transferring web pages over TCP connections. In contrast, ipconfig, ping, and tracert are command-line diagnostic utility tools used by system administrators to inspect IP configurations, test host reachability, and trace network packet routing paths across interconnected network infrastructures.

140. (A) I, II, and III
IP address conflicts disrupt local communication when duplicate addresses are assigned, DNS failures prevent translating hostnames into network addresses, and incorrect default gateway settings prevent routing packets beyond local subnets. However, physically unplugging a network cable simply breaks physical link connectivity; it does not alter static IP configurations to dynamic DHCP assignments.

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equivalent purpose, detailing network interface configurations and hardware MAC parameters.

129. (C) Searching "What is my IP" on a web search engine like Google
Searching "What is my IP" on web search engines is the most appropriate method for residential users to discover their public IP address assigned by an Internet Service Provider. Search engine web servers detect incoming public gateway IP addresses forwarding the web query, displaying the external public address directly on the search results web page.

130. (B) A utility used to test the reachability of a host on an IP network and measure round-trip time
The ping command is an essential diagnostic network utility used to test target host reachability across IP networks. By sending ICMP Echo Request packets to a designated IP address or domain name and measuring the latency until receiving ICMP Echo Reply responses, ping reports connection availability, packet loss, and round-trip transit time.

131. (C) ICMP (Internet Control Message Protocol)
The ping utility relies on the Internet Control Message Protocol operating at the Network layer to evaluate host reachability. Specifically, ping generates ICMP Type 8 (Echo Request) packets sent to destination IP addresses. Upon receipt, target host operating systems automatically transmit ICMP Type 0 (Echo Reply) packets back, allowing latency and connectivity evaluation.

132. (B) To verify basic network connectivity between two computers
The primary application of the ping utility is verifying basic IP connectivity between host computers across local or wide area networks. Network administrators run ping commands to confirm whether network interface stacks respond, determine network latency in milliseconds, identify packet loss rates, and isolate physical or logical network failures along communication pathways.

133. (B) Ping the loopback address (127.0.0.1) → Ping the local router (gateway) → Ping a website on the Internet
Troubleshooting network connectivity logically begins by pinging the loopback address (127.0.0.1) to confirm that the local machine's TCP/IP stack operates correctly. Next, pinging the local gateway router isolates local physical link and router connection issues. Finally, pinging an internet host tests external gateway routing, ISP connectivity, and remote path reachability.

134. (B) There is a delay or congestion in the network between the source and destination.
Elevated response latency measured in milliseconds during ping diagnostic tests indicates network delay or congestion along packet transit paths. High latency can result from bandwidth saturation, excessive intermediary router hops, wireless signal interference, or degraded physical transmission links between source and destination endpoints, slowing overall data throughput across network connections.

135. (C) Disabling the computer's monitor to increase internet bandwidth.
Disabling a computer's monitor display output has no impact on network bandwidth, interface controllers, or IP packet transfer speeds. Proper network troubleshooting methods include verifying physical cable connections, power cycling local routers to clear temporary firmware glitches, and utilizing diagnostic ping commands to evaluate local gateway and remote host connectivity.

136. (B) The routing path to the destination cannot be found by the local system or router.
A "Destination Host Unreachable" error message in ping diagnostic outputs indicates that local host machines or intermediate default routers cannot determine valid network routing paths to requested IP addresses. This error typically occurs when local IP configurations are misconfigured, remote subnet routing tables lack destination routes, or target network links are offline.

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137. (B) That the local computer's TCP/IP network stack is functioning correctly
Pinging the IPv4 loopback address 127.0.0.1 tests internal network protocol operations directly on the local host. Because loopback traffic is processed entirely within the local operating system's software stack without transmitting data onto physical network interfaces, a successful loopback ping confirms that local TCP/IP drivers and network software stacks function properly.

action
(C) Print office documents directly over local wireless networks
(D) Serve as an internal intercom system for home safety

12. Which display technology is primarily used in e-readers, such as the Amazon Kindle, to mimic the appearance of regular printed paper?
(A) AMOLED
(B) E-ink
(C) Plasma
(D) CRT

13. Which of the following operating systems is based on an open-source kernel and is heavily used in mobile gadgets globally?
(A) Android
(B) iOS
(C) Windows Phone
(D) BlackBerry OS

14. iOS is the proprietary mobile operating system developed exclusively for devices manufactured by:
(A) Samsung
(B) Google
(C) Apple
(D) Microsoft

15. Consider the following statements regarding mobile applications:
I. Native apps are typically downloaded from a platform's official app store.
II. Web apps run directly within a mobile web browser.
III. All mobile applications require an active internet connection to open.
IV. Utility apps include basic tools like calculators and file managers.
Which of the above statement(s) is/are correct?
(A) I, II and III only
(B) I, II and IV only
(C) II, III and IV only
(D) I, III and IV only

16. In the agriculture sector, smartphones are commonly used by farmers to:
(A) Perform chemical soil sample analysis directly on the screen
(B) Mechanically harvest field crops automatically
(C) Access weather forecasts and crop market prices
(D) Calculate the precise total weight of heavy farm tractors

17. Which IT gadget is most heavily utilised in modern smart classrooms to provide an interactive digital slate for students?
(A) Smartwatch
(B) Tablet
(C) Power bank
(D) Fitness band

18. Telemedicine applications running on a tablet or smartphone primarily assist which sector?
(A) Entertainment
(B) Transportation
(C) Agriculture
(D) Health

19. For administrative and government fieldwork, which portable gadget configuration is typically used to capture biometric attendance or verify e-KYC?
(A) A mobile device connected to a biometric scanner
(B) A high-definition digital camera synchronized with a smart bulb
(C) A cellular smartwatch connected wirelessly to a standalone e-reader
(D) A high-capacity power bank paired with true wireless earbuds

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20. Read the Assertion (A) and Reason (R) carefully and choose the correct option.
Assertion (A): NFC technology enables contactless payments through smartphones at retail checkout terminals.
Reason (R): NFC operates over long distances, typically up to 50 metres, allowing payment from across the store.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

21. What is the recommended and safest method to clean the touchscreen display of a tablet or smartphone?
(A) Wiping it with a soft microfibre cloth
(B) Spraying water directly onto the screen
(C) Scrubbing it with a rough paper towel
(D) Using strong industrial household cleaners

HTTP on 80, and POP3 on 110—are accurate standards.

111. (B) They allow a single device with one IP address to run multiple network applications simultaneously without mixing up their data.
Port numbers provide transport layer process identification, allowing a single computing host with a single IP address to maintain multiple active network connections simultaneously. By binding individual network sockets to specific logical port numbers, operating system transport stacks differentiate web browsing, file downloading, and email streaming traffic, delivering incoming packets to correct application processes.

112. (A) FTP, SMTP, HTTP, HTTPS
Arranging well-known protocol ports in ascending numerical order begins with File Transfer Protocol operating on command port 21. Simple Mail Transfer Protocol follows on port 25 for mail transmission. Hypertext Transfer Protocol uses port 80 for plain-text web browsing, and Hypertext Transfer Protocol Secure operates on port 443 for encrypted web communications.

113. (A) 0 to 1023
Well-Known Ports encompass the numerical range from 0 to 1023, as assigned by the Internet Assigned Numbers Authority. Reserved for standardized system protocols and widely deployed services—such as HTTP on 80, HTTPS on 443, FTP on 21, and SSH on 22—these low-numbered ports require elevated system administrator privileges to bind on host operating systems.

114. (B) It is used by the Domain Name System (DNS) for resolving domain names.
Port 53 is assigned as the standardized well-known transport port for Domain Name System operations. DNS servers listen on port 53 using both UDP and TCP protocols to process hostname resolution requests from client resolvers, translating domain names into IP addresses and transferring zone data across authoritative name server infrastructures.

115. (D) 192.168.1.1
The value 192.168.1.1 represents a 32-bit IPv4 logical address assigned to network host interfaces or router gateways. In contrast, standard Port 80, Port 443, and Port 21 represent 16-bit logical port numbers assigned to transport layer services (HTTP, HTTPS, and FTP respectively), making an IP address functionally and structurally distinct from port numbers.

116. (B) A network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules
A firewall is a network security system designed to monitor, filter, and inspect incoming and outgoing network traffic. Operating based on predefined security rules and access policies, firewalls establish protective barriers between trusted internal networks and untrusted external networks like the internet, blocking unauthorized connections and preventing malicious attacks from accessing host systems.

117. (A) Both Statement I and Statement II are true
Firewalls can be implemented as software applications running on individual host operating systems, dedicated hardware security appliances deployed at network boundaries, or a combination of both. Regardless of form, firewalls serve to establish protective security barriers that inspect and filter traffic exchanged between secure internal networks and untrusted external environments such as the internet.

118. (B) Packet filtering based on IP addresses and port numbers
Basic network firewalls rely primarily on packet filtering mechanisms to evaluate network traffic. By inspecting individual IP packet headers, firewalls check parameters such as source IP address, destination IP address, transport protocol type, and source/destination port numbers against defined access control rules to determine whether to permit or drop incoming and outgoing datagrams.

119. (B) Unauthorized access to or from a private network
Firewalls are designed specifically to protect private networks against unauthorized network access and external cyber threats. By evaluating incoming and outgoing connection requests against security policy rulesets, firewalls block malicious probing, unauthorized remote login attempts, and illicit data exfiltration, ensuring that only authenticated, rule-compliant communication passes through network perimeters.

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(C) Infrared wireless transmission
(D) Wired Ethernet networking

34. What is the primary function of the pedometer feature found in a fitness band?
(A) Continuously measuring the user's pulse and heart rate
(B) Tracking real-time blood oxygen saturation levels
(C) Detecting precise geographical GPS coordinates
(D) Counting steps taken by the user

35. Consider the following list of typical IT gadgets:
1. Smartphone
2. Smartwatch
3. Laptop
4. Tablet

Which option correctly arranges these gadgets in ascending order based on their typical physical screen size?
(A) 2, 1, 4, 3
(B) 1, 2, 3, 4
(C) 2, 4, 1, 3
(D) 4, 1, 3, 2

36. Which feature allows a smartphone to act as a portable Wi-Fi router, sharing its mobile cellular data with other devices?
(A) Bluetooth tethering
(B) Airplane Mode
(C) Mobile Hotspot
(D) Screen Mirroring

37. Which of the following statements about the Android operating system is true?
(A) It is an open-source operating system based on Linux
(B) It is exclusively available on smartphones manufactured by Google
(C) It does not support touchscreen inputs
(D) It requires a physical keyboard to navigate

38. What is the primary purpose of the "App Store" on iOS or "Google Play Store" on Android?
(A) To securely format the internal storage drive of the device
(B) To operate as a physical retail repair shop for broken devices
(C) To serve as a network firewall against virus infections
(D) To download and update applications

39. Which gadget is most suitable for a user who wants to read digital books for long hours without experiencing the eye strain associated with backlit LCD screens?
(A) Smartphone
(B) E-reader
(C) Laptop
(D) Tablet

40. In the context of Bluetooth devices, what does the term "pairing" mean?
(A) Charging two separate electronic devices simultaneously from one outlet
(B) Connecting two completely different power adapter charger brands together
(C) Connecting two devices wirelessly to share data
(D) Permanently deleting stored system files from a hardware device

41. Which gadget is primarily designed with large dedicated lenses and sensors to capture high-quality still images and video, but lacks native cellular phone capabilities?
(A) Multi-purpose touchscreen tablet
(B) Wrist-worn smartwatch
(C) Compact action camera
(D) Digital camera

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42. In computer and gadget hardware, what is the full form of USB?
(A) Universal Serial Bus
(B) Unified System Board
(C) Universal Synchronous Block
(D) Uninterrupted Service Base

43. Which of the following is a key advantage of using a smart bulb over a traditional LED bulb?
(A) It operates continuously without consuming any electrical power from the grid
(B) It allows remote control of brightness and colour via an app
(C) It features permanent illumination that never burns out or needs replacing
(D) It operates wirelessly without requiring connection to an electrical socket

44. What type of gadget is the "Apple Watch"?
(A) A mechanical timepiece
(B) A smartwatch
(C) A fitness band without a display
(D) An action camera

45. Consider the following statements regarding e-readers:
I. E-readers typically boast a significantly longer battery life than standard tablets.

II. E-readers use high-refresh-rate LCD screens designed primarily for fast-paced gaming.
III. The Amazon Kindle is a prominent example of an e-reader.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

46. Which specific sensor allows a smartphone display to automatically turn off when the device is held near the user's ear during a voice call?
(A) Accelerometer
(B) Gyroscope
(C) Proximity sensor
(D) Ambient light sensor

47. Which of the following is NOT typically classified as an IT gadget?
(A) Wearable smartwatch
(B) Portable touchscreen tablet
(C) Dedicated e-ink e-reader
(D) Manual typewriter

48. Which wireless connectivity option is most commonly used by a wireless mouse or keyboard to connect to a laptop?
(A) Near Field Communication
(B) Infrared optical link
(C) Bluetooth
(D) Wired Ethernet cable

49. For a farmer using an agriculture app to map out the exact boundaries of a field, what is the most critical smartphone hardware feature required?
(A) High-resolution front camera
(B) GPS module
(C) Fingerprint scanner
(D) Ambient light sensor

50. Consider the following statements regarding gadget batteries and charging:
I. Constantly leaving a gadget exposed to extreme heat can degrade its battery lifespan.
II. Lithium-ion batteries used in modern gadgets suffer heavily from the "memory effect" and must be fully drained to 0% before every recharge.
III. Using official or certified chargers is recommended for safety.
IV. Fast charging technologies deliver a higher wattage to charge the device quicker.
Which of the above statement(s) is/are correct?
(A) I, II and III only
(B) I, III and IV only
(C) I, II and IV only
(D) II, III and IV only

51. Which major digital initiative launched by the Government of India allows citizens to securely store and access authentic digital copies of their documents on a smartphone?
(A) UMANG portal
(B) e-NAM platform
(C) SWAYAM initiative
(D) DigiLocker

52. Which payment system allows instant, round-the-clock money transfer directly between bank accounts using a mobile app in India?
(A) NEFT
(B) RTGS
(C) IMPS
(D) UPI

53. A smartwatch that monitors pulse rates and alerts a user to irregular heartbeats is primarily serving as an IT gadget in which sector?
(A) Agriculture
(B) Health
(C) Education
(D) E-commerce

54. What happens when a smartphone or tablet is placed in "Airplane Mode" or "Flight Mode"?
(A) All locally stored internal device data is temporarily encrypted
(B) The main operating system automatically reboots into safe mode
(C) Wireless radio transmissions are disabled
(D) The phone automatically dials local emergency service dispatchers

55. Read the Assertion (A) and Reason (R) carefully and choose the correct option.
Assertion (A): When purchasing a laptop primarily for basic web browsing and typing documents, a high-end dedicated graphics card is essential.
Reason (R): Basic web browsing and word processing do not require heavy graphical processing power.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.

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(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

56. What does an IP rating (such as IP68) on a modern smartphone's specification sheet indicate?
(A) The maximum data transfer speed of its mobile internet connection
(B) Protection against dust and water entry
(C) The total resolution and megapixel count of its primary camera
(D) The diagonal physical measurement of its primary display screen

57. A smart plug is an IT gadget primarily used to:
(A) Significantly increase the data transmission speed of a home Wi-Fi network
(B) Wirelessly store automatic backup data files from a desktop or laptop
(C) Continuously measure indoor air quality and room temperature levels
(D) Convert electrical appliances into app-controlled devices

58. Which of the following is the most appropriate safety action to take if a laptop or smartphone battery begins to physically bulge or swell?
(A) Stop using it, power it off, and replace the battery
(B) Place the swollen device inside a household freezer to shrink the battery
(C) Carefully pierce the outer battery layer with a sharp pin to vent gas
(D) Continue operating the device normally while keeping it plugged into AC power

59. The security feature that uses facial recognition to unlock a smartphone relies primarily on which hardware component?
(A) High-resolution rear-facing primary camera sensor
(B) Capacitive or optical fingerprint scanner
(C) Internal motion-tracking gyroscope
(D) Front camera and depth sensors

60. Match the common mobile applications in List I with their primary category in List II.
List I: (Mobile Application)
P. WhatsApp
Q. Spotify
R. Google Maps
S. Amazon
List II: (Category)
1. Navigation and Routing
2. Audio Streaming
3. E-commerce
4. Instant Messaging
(A) P-4, Q-2, R-1, S-3
(B) P-2, Q-4, R-1, S-3
(C) P-4, Q-1, R-2, S-3
(D) P-1, Q-2, R-3, S-4

61. Which of the following is a common security risk associated with connecting a laptop or smartphone to a free, unsecured public Wi-Fi network?
(A) The device will permanently lose its ability to connect to cellular networks
(B) Data could be intercepted by hackers
(C) The internal battery of the device will drain completely within minutes
(D) The hardware's physical glass display screen could suddenly crack

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62. In the context of navigation apps on smartphones, what is the full form of GPS?
(A) General Packet Service
(B) Global Positioning System
(C) Global Pointing Satellite
(D) Geospatial Processing System

63. Which mobile application provided by the Government of India acts as a unified platform offering access to multiple central and state government services?
(A) WhatsApp
(B) Instagram
(C) Telegram
(D) UMANG

64. What is a "stylus" in the context of tablets and smartphones?
(A) A tempered protective glass cover applied over the main display screen
(B) A pen-like tool for precise touchscreen input
(C) A specialized high-speed charging cable used for fast power delivery
(D) An internal hardware sensor that measures battery operating temperature

65. Why is it highly recommended to set a screen lock (such as a PIN, pattern, or password) on a mobile gadget?
(A) To automatically maximize the maximum brightness of the display
(B) To prevent unauthorized access to personal data
(C) To significantly boost the network download

reset its electrochemical memory state

87. Which feature on a premium smartwatch allows it to make and receive phone calls independently, without being tethered or connected to a nearby smartphone?
(A) Step-counting pedometer
(B) Optical heart rate monitor
(C) Ambient light detection sensor
(D) Cellular support

88. Which of the following devices falls under the category of a "wearable" IT gadget?
(A) Smartwatch
(B) Desktop PC
(C) Wi-Fi Router
(D) Power bank

89. In administrative and office work, what is the role of a portable document scanner gadget or a scanner app on a smartphone?
(A) To print physical paper hard copies of unread digital emails
(B) To physically cut and shred confidential office paperwork
(C) To project a digital presentation directly onto a large screen
(D) To convert paper documents into digital files

90. Select the correct sequence of typical battery capacities (in mAh) found in the following gadgets, arranged from lowest to highest.
(A) Wireless Earbud, Smartwatch, Smartphone, Power Bank
(B) Power Bank, Smartphone, Smartwatch, Wireless Earbud
(C) Smartwatch, Wireless Earbud, Smartphone, Power Bank
(D) Smartphone, Power Bank, Wireless Earbud, Smartwatch

91. Which of the following is a common symptom of a malware or virus infection on a smartphone?
(A) The display panel resolution automatically increases to higher pixels
(B) Frequent pop-up ads and rapid battery drain
(C) The device hardware automatically upgrades itself to a faster processor
(D) The operating system permanently transforms the smartphone into an e-reader

92. What is the full form of SIM, as used in mobile phones to connect to a cellular network?
(A) Subscriber Identity Module
(B) Secure Broadband Internet Module
(C) System Information Storage Memory
(D) Serial Hardware Interface Monitor

93. Which application platform is heavily used in India for verifying digital identity and providing authentication via OTP or biometrics on mobile devices?
(A) WhatsApp Messenger
(B) Facebook Platform
(C) Aadhaar
(D) Google Maps Navigation

94. Among the following options, which device typically requires the most RAM and processing power to perform its standard optimal functions?
(A) E-reader
(B) Fitness band
(C) Laptop
(D) Smart plug

95. What is the primary use of an "Action Camera" in a user's daily life or hobbies?
(A) Recording point-of-view video during outdoor sports
(B) Scanning commercial barcodes for automated retail inventory management
(C) Typing and composing lengthy formal business emails on a keyboard
(D) Rendering and displaying digital e-books on an e-ink screen

96. Which of the following is a prominent example of a gadget running the iOS or iPadOS operating system?
(A) Samsung Galaxy S23
(B) Amazon Kindle
(C) Google Pixel
(D) Apple iPad

97. When buying a power bank, a user should ensure its stated capacity (mAh) is ideally:
(A) Identical to the total internal gigabyte storage capacity of their smartphone
(B) Larger than the battery capacity of the target device
(C) Considerably smaller than the total milliampere-hour rating of their phone
(D) Measured strictly in high-frequency gigahertz or megahertz values

98. Which of the following is a vital security precaution related to digital payments on a smartphone?
(A) Always sharing your UPI PIN with customer care executives if they ask

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77. What is the primary advantage of choosing a notebook computer over a traditional desktop computer?
(A) Larger physical screen size
(B) Portability and mobility
(C) The ability to use floppy disks
(D) The lack of an internal battery

78. In an educational setting, which portable gadget is most suitable for a teacher to digitally write notes and project them wirelessly onto a smartboard?
(A) Tablet with a stylus
(B) A basic wearable fitness band
(C) A Wi-Fi enabled smart plug
(D) A high-capacity power bank

79. Which of the following is considered the most secure method to lock a smartphone against unauthorised entry?
(A) A simple four-digit numeric PIN code such as 1234
(B) A complex alphanumeric password
(C) A basic swipe-to-unlock touchscreen gesture without any PIN
(D) A highly predictable geometric swipe pattern drawn on screen

80. Read the Assertion (A) and Reason (R) carefully and choose the correct option.
Assertion (A): Bluetooth earbuds can stream high-quality audio from a smartphone without any physical cables connecting the two devices.
Reason (R): Bluetooth technology uses short-wavelength radio waves to transmit digital data wirelessly over short distances.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

81. Which design trend has become increasingly common in modern flagship smartphones over the past few years?
(A) Adding physical rotary dials
(B) Transitioning back to resistive touchscreens
(C) Removal of the 3.5mm analog headphone jack
(D) Including built-in CD-ROM drives

82. In the context of wireless network connectivity in laptops and smartphones, what does the abbreviation Wi-Fi stand for?
(A) Wired Optical Fibre
(B) Wireless Optical Fibre Network
(C) Wide Frequency Spectrum
(D) Wireless Fidelity

83. A user wants to read a digital e-book outdoors in direct, bright sunlight. Which gadget provides the best glare-free reading experience?
(A) An e-reader with e-ink
(B) A laptop computer with a glossy glass screen
(C) A smartphone set to minimum screen brightness
(D) A touchscreen smartwatch

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84. What is the main purpose of activating "Dark Mode" in a gadget's operating system or apps?
(A) To significantly increase the maximum audio speaker volume of the device
(B) To reduce screen glare and save OLED battery power
(C) To completely and permanently disable the hardware display panel
(D) To automatically boost and speed up the device's cellular internet connection

85. Match the wireless technologies in List I with their typical use case in List II.
List I: (Wireless Technology)
P. NFC
Q. Wi-Fi
R. Bluetooth
S. GPS
List II: (Typical Use Case)
1. Wireless connection of headphones
2. Route mapping and navigation
3. Connecting to a home broadband router
4. Contactless tap-and-pay transactions
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-1, R-3, S-2
(D) P-1, Q-3, R-4, S-2

86. What does "fast charging" refer to in the context of mobile gadgets?
(A) Recharging an internal device battery exclusively using rooftop solar energy panels
(B) Delivering higher wattage to charge the battery faster
(C) Mechanically swapping out a depleted battery module with a fully charged unit
(D) Rapidly discharging the internal battery to

(D) Bury the unit under garden soil to allow natural decomposition

130. Read the Assertion (A) and Reason (R) carefully and choose the correct option.
Assertion (A): It is highly advisable to apply a tempered glass screen protector to a new smartphone.
Reason (R): A tempered glass protector helps shield the primary display panel from scratches and absorbs the impact of accidental drops.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

131. Which of the following tech companies is the primary developer of the Android mobile operating system?
(A) Apple
(B) Microsoft
(C) Google
(D) IBM

132. What is "Phishing" in the context of smartphone security?
(A) An advanced hardware sealing feature that completely waterproofs a device
(B) Fraudulent messages seeking sensitive personal details
(C) A catastrophic display hardware failure causing screen colors to wash out
(D) The wireless protocol process used when transferring media files via Bluetooth

133. Which smartphone setting should a user adjust to prevent the screen from automatically turning off while they are reading a long article?
(A) System Airplane Mode setting
(B) Screen timeout
(C) Incoming notification ringtone
(D) Wireless Bluetooth visibility

134. Which IT gadget is primarily designed to provide hands-free audio and a microphone for taking phone calls while driving or working?
(A) Dedicated e-ink e-reader
(B) Rugged action camera
(C) Wearable fitness band
(D) Bluetooth headset

135. Consider the following statements regarding Action Cameras:
I. They are designed to be small, rugged, and lightweight.
II. They are typically waterproof or come with a durable waterproof housing.
III. They are primarily meant for stationary, formal studio portrait photography.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

136. Which of the following is a key technical specification to consider when purchasing a dedicated digital camera for photography?
(A) The capacity of the SIM card slot
(B) Sensor size and megapixel count
(C) The number of pre-installed web browsers
(D) The length of the charging cable

137. What is the role of the "Cache" memory in a smartphone application?
(A) It permanently purges and deletes user data whenever an app is closed
(B) It stores temporary data for faster app loading
(C) It functions as a security firewall protecting system files from viruses
(D) It physically expands the internal flash storage hardware capacity

138. Match the Indian Digital Initiatives in List I with their primary use case in List II.
List I: (Digital Initiative)
P. DigiLocker
Q. UPI
R. e-Hospital
S. UMANG
List II: (Primary Use Case)
1. Real-time digital payments
2. Booking medical appointments in government hospitals
3. Secure storage of authentic digital documents
4. Single mobile app for accessing multiple government services
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

139. Which of the following devices acts as an output IT gadget, receiving audio data wirelessly from a smartphone and playing it aloud?
(A) Bluetooth Speaker

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(B) Writing your banking password on the back of the phone case
(C) Never sharing your UPI PIN or banking OTP with anyone
(D) Using the same simple password for all banking apps

99. What does the term "Widgets" mean in smartphone and tablet terminology?
(A) Specialized micro-screws utilized to fasten internal smartphone hardware
(B) Home screen shortcuts displaying quick info
(C) Malicious virus programs designed to delete user photo files
(D) External physical antenna accessories used for boosting cell signals

100. A smartwatch tracks a user's exact geographical route during a morning run primarily using which built-in technology?
(A) Short-range Bluetooth connection
(B) Built-in GPS
(C) Local Wi-Fi wireless network
(D) Near Field Communication link

101. Which feature prevents a smartphone or tablet display from rotating automatically when the user tilts the device or lies down?
(A) Orientation lock
(B) Airplane mode setting
(C) Do Not Disturb feature
(D) Power saving mode setting

102. In the context of secure mobile banking and logins, what is the full form of OTP?
(A) One Time Password
(B) Online Transaction Protocol
(C) Over The Phone
(D) Only Text Password

103. Which is considered the most secure and authentic source to download apps on an Android smartphone?
(A) Unknown third-party websites offering free premium apps
(B) Direct links sent via SMS by unknown numbers
(C) The official Google Play Store
(D) Email attachments from unverified senders

104. Which of the following statements about smart home plugs is true?
(A) They generate clean electrical energy independently using internal solar cells
(B) They operate completely offline without requiring any local network connections
(C) They physically alter and step down the electrical voltage of household outlets
(D) They enable scheduling appliances on or off via an app

105. Consider the following statements regarding laptop computers:
I. Laptops feature a built-in touchpad that serves the function of a computer mouse.
II. Laptops contain a built-in rechargeable battery allowing portable use away from a wall outlet.
III. Laptops lack ports and cannot be connected to an external monitor or projector.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

106. What specific type of IT gadget is the "Kindle Paperwhite"?
(A) Smartwatch
(B) Fitness Band
(C) E-reader
(D) Power Bank

107. Smart bulbs designed for home automation typically connect to a local home network using which technology?
(A) Wi-Fi or Zigbee
(B) Ethernet cables
(C) USB cables
(D) NFC

108. What is the primary function of activating "Power Saving Mode" or "Battery Saver" in a smartphone?
(A) It automatically forces screen display brightness to maximum output levels
(B) It configures the mobile device to function as a wireless Wi-Fi hotspot
(C) It limits background processes to extend battery life
(D) It deletes old media files and photos to instantly free up internal storage

109. Which of the following is a physical health issue commonly linked to poor posture while looking down at a smartphone for excessive periods?
(A) Neck strain
(B) Increased cardiovascular fitness levels
(C) Improved overall posture and spinal

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alignment
(D) Enhanced visual far-sightedness capability

110. Consider the following statements regarding digital payments and mobile banking:
I. BHIM is an Indian digital payment application based on the UPI framework.
II. Digital wallets require a smartphone or computer to operate.
III. UPI transactions can only be executed during standard bank working hours.
IV. A secure internet connection is required for real-time mobile banking transactions.
Which of the above statement(s) is/are correct?
(A) I, II and III only
(B) I, II and IV only
(C) II, III and IV only
(D) I, III and IV only

111. What does it mean if a modern smartphone is advertised as having a "dual camera" or "triple camera" setup on the back?
(A) It requires inserting two separate physical memory cards to store captured photos
(B) It automatically captures high-resolution images that are three times larger in file size
(C) It includes multiple camera lenses for varied photography
(D) It allows the mobile camera interface to be operated by multiple people at once

112. In mobile communication terminology, what is the full form of SMS?
(A) Short Message Service
(B) Simple Media System
(C) Secure Messaging Standard
(D) System Management Service

113. How do smartwatches typically sync tracked health and fitness data back to a user's main smartphone?
(A) By manually copying files onto a physical floppy disk storage
(B) By generating physical paper printouts of daily metrics
(C) Via a companion app over Bluetooth
(D) By sending periodic text messages to the mobile network provider

114. Which gadget is most practical and commonly used by a delivery executive to navigate driving routes and electronically mark parcels as delivered on the go?
(A) E-reader
(B) Smartphone
(C) Desktop computer
(D) Action camera

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115. Read the Assertion (A) and Reason (R) carefully and choose the correct option.
Assertion (A): Listening to audio at maximum volume through wireless earbuds for prolonged periods can cause permanent hearing loss.
Reason (R): High-decibel sound waves emitted close to the eardrum can damage the sensitive hair cells in the inner ear.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

116. What is the primary physical benefit of using a tablet over a smartphone for reading full-layout digital e-newspapers or PDF magazines?
(A) Tablets feature physical built-in tactile keyboards for faster text scanning
(B) Tablets consistently offer significantly longer battery life than standalone e-readers
(C) The larger display enhances document readability
(D) Tablets do not require cellular or local internet access to download new publications

117. Which of the following is a widely used application software platform for conducting video conferencing on laptops and tablets?
(A) Zoom
(B) MS Paint
(C) Notepad
(D) Calculator

118. When setting up a new Android smartphone, what is fundamentally required to access cloud backups, sync contacts, and download apps from the Play Store?
(A) A printed photograph of the user
(B) A Google account (Email ID)
(C) A credit card for basic free usage
(D) A physical USB drive

119. A user observes that their smartphone battery drains unusually fast even when not actively in use. Which of the following is the most likely software-related cause?
(A) The overall display brightness level is permanently set to minimum

(B) The phone is continuously kept in disconnected Airplane Mode
(C) Unoptimised apps running background tasks
(D) The operating system interface is actively utilizing a system-wide dark theme

120. Match the Operating Systems in List I with the typical gadget they run on in List II.
List I: (Operating System)
P. Windows 11
Q. Android
R. iOS
S. watchOS
List II: (Gadget)
1. Apple iPhone
2. Samsung Galaxy Smartphone
3. Apple Watch
4. PC Laptop
(A) P-4, Q-2, R-1, S-3
(B) P-1, Q-2, R-4, S-3
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-1, S-3

121. Which IT gadget would best assist an agriculture extension officer who needs to display educational farming videos to a small group of farmers while standing in a field?
(A) Smartwatch
(B) Tablet
(C) Wireless earbuds
(D) Power bank

122. In the context of documents commonly read on smartphones and tablets, what is the full form of PDF?
(A) Printed Physical Document Format
(B) Portable Document Format
(C) Personal Data Information File
(D) Public Domain Document Format

123. What is the primary characteristic of a "Smart TV" or a TV connected to a smart streaming gadget compared to a traditional television?
(A) It relies exclusively on manual analog roof antennas to receive broadcast signals
(B) It displays all broadcast television programming strictly in black and white
(C) It features internet access and streaming app support
(D) It functions solely as a passive display monitor with no internal audio speakers

124. Which of the following actions helps protect a laptop against physical theft when left briefly in a public workspace or library?
(A) Installing comprehensive software antivirus protection
(B) Using a security cable lock tied to a desk
(C) Manually setting the display screen brightness level to zero
(D) Disconnecting the device completely from local Wi-Fi networks

125. Which mobile operating system relies heavily on the "APK" file format for manual application installation?
(A) iOS
(B) Android
(C) Windows
(D) macOS

126. What does "Cloud Storage" mean in the context of mobile devices and gadgets?
(A) Saving files directly onto external physical USB flash drives
(B) Storing data on remote internet servers
(C) Utilizing a dedicated meteorological application to monitor local cloud cover
(D) The internal thermal management process of cooling an overheated battery

127. Which feature on modern smartphones and smart speakers allows the user to operate the device, ask questions, or set alarms using voice commands?
(A) Virtual Assistant software
(B) Offline Airplane Mode system toggle
(C) Internal motion-detecting gyroscope
(D) Hardware barometric pressure sensor

128. In the terminology of smart home gadgets (like smart plugs and bulbs), what does the abbreviation IoT stand for?
(A) Internet of Things
(B) Internal Operating Technology
(C) Intranet of Towers
(D) Information on Time

129. Which of the following is the most appropriate and environmentally safe way to dispose of an old, degraded lithium-ion power bank?
(A) Discard it directly into a standard household rubbish dustbin
(B) Incinerate the battery completely in an open outdoor backyard fire
(C) Take it to an e-waste recycling centre

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speed of applications
(D) To stop the internal rechargeable battery from chemically degrading

66. Which wireless standard is commonly identified by a logo featuring a highly stylised, runic-inspired letter "B" on a blue background?
(A) Bluetooth
(B) Wi-Fi wireless
(C) Near Field Communication
(D) Zigbee network

67. What does the unit "mAh" stand for when describing a smartphone or tablet's battery capacity?
(A) Mega-ampere-hour
(B) Micro-ampere-hertz
(C) Milli-ampere-hertz
(D) Milliampere-hour

68. Which compact device provides portable backup power to recharge mobile phones when a wall outlet is entirely unavailable?
(A) Smart plug
(B) Power bank
(C) E-reader
(D) Action camera

69. Which gadget is typically worn on the wrist specifically to monitor sleep patterns, count daily steps, and estimate calories burned, usually without standalone cellular calling features?
(A) Power bank
(B) E-reader
(C) Fitness band
(D) Action camera

70. Consider the following statements regarding smartphones:
I. Smartphones combine the features of a traditional mobile phone with a portable computer.
II. Smartphones can download and run third-party applications from an app store.
III. Smartphones only support voice calls and cannot browse the internet.
Which of the above statement(s) is/are correct?
(A) I and III only
(B) II and III only
(C) I and II only
(D) I, II and III

71. Which internal component serves as the primary "brain" of a smartphone, processing all instructions and running the operating system?
(A) High-resolution touchscreen display panel
(B) Rechargeable lithium-ion battery pack
(C) Primary high-definition camera sensor unit
(D) Processor (SoC)

72. What does a fitness band or smartwatch's SpO2 sensor primarily measure?
(A) Systemic arterial blood pressure
(B) Body mass index ratio
(C) Daily cellular hydration levels
(D) Blood oxygen levels

73. Which specific built-in security feature helps a user remotely locate, ring, or erase data from a lost Android smartphone?
(A) Find My Device
(B) Airplane Mode
(C) Google Assistant
(D) Digital Wellbeing

74. Which of the following is an example of application software used on smartphones?
(A) Android operating system
(B) Apple iOS mobile system
(C) Google Chrome
(D) The physical device motherboard

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75. Consider the following statements regarding gadget usage and precautions:
I. Texting on a smartphone while driving a vehicle is a major safety hazard.
II. Using a gadget directly under a hot sun for extended periods can cause thermal shutdown.
III. It is perfectly safe to charge a phone using a frayed or visibly damaged charging cable.
IV. Maintaining proper posture while using a laptop helps prevent back and neck pain.
Which of the above statement(s) is/are correct?
(A) I, II and IV only
(B) II, III and IV only
(C) I, III and IV only
(D) I, II and III only

76. Which connectivity feature must be turned on to use mobile payment services like Google Wallet or Apple Pay at a physical retail store's tap-to-pay terminal?
(A) Wireless Bluetooth connection
(B) Portable Wi-Fi Hotspot tethering
(C) Satellite GPS positioning
(D) NFC technology

(B) High-resolution Digital Camera
(C) Wearable Health Fitness Band
(D) Wi-Fi Connected Smart Plug

140. Consider the following statements regarding the purchasing of IT gadgets:

I. Checking user reviews and expert ratings is helpful before buying a new gadget.
II. The availability of a post-sales service network and warranty should be considered.
III. A higher price always guarantees that a laptop will have a longer battery life.
IV. Evaluating personal storage requirements helps in selecting the correct model configuration.

Which of the above statement(s) is/are correct?
(A) I, II and III only
(B) I, II and IV only
(C) II, III and IV only
(D) I, III and IV only

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network, it provides precise geo-location, elevation, and time synchronisation information to receiving chips inside smartphones worldwide, enabling accurate turn-by-turn navigation, location tracking, spatial mapping, and location-based mobile application services.

63. (D) UMANG
UMANG, expanding to Unified Mobile Application for New-age Governance, is an all-in-one mobile application launched by the Government of India. It provides citizens with centralized access to hundreds of pan-India government services spanning healthcare, education, utility bill payments, social security schemes, and official documentation services.

64. (B) A pen-like tool for precise touchscreen input
A stylus is a slender, pen-shaped input tool engineered specifically for touchscreen interactions on tablets and smartphones. It allows users to write handwritten digital notes, execute detailed graphic design work, navigate interfaces precisely, and draw digital artwork with far greater accuracy than standard human finger contacts offer.

65. (B) To prevent unauthorized access to personal data
Setting up device screen security, such as an alphanumeric password, PIN, or biometric check, establishes a protective digital barrier. This prevents unauthorized individuals from accessing sensitive personal messages, financial banking software, private media files, and confidential work documents stored inside the mobile hardware.

66. (A) Bluetooth
The standard logo for Bluetooth features a stylized runic combination of King Harald Bluetooth's initials enclosed within a blue geometric backdrop. This globally recognized symbol marks consumer electronic equipment capable of establishing short-range, low-power wireless data connections and audio streaming between compatible host and client devices.

67. (D) Milliampere-hour
The abbreviation mAh stands for milliampere-hour, an electrical unit of measure used to state battery energy storage capacity. It expresses the electric charge a battery delivers over one hour, helping users compare energy storage capacity and expected operational runtime across various mobile gadgets.

68. (B) Power bank
A power bank is a portable secondary energy storage device equipped with rechargeable lithium-ion battery cells. Designed for mobility, it stores electrical energy to charge mobile phones, wireless headsets, and tablets on the go via standard USB ports when electrical wall outlets are inaccessible.

69. (C) Fitness band
A fitness band is a lightweight wearable health tracker worn on the wrist. Utilizing integrated accelerometers and optical pulse sensors, it continuously tracks daily physical step counts, calculates active caloric expenditure, monitors sleep quality, and measures heart rate metrics, usually operating without standalone cellular call hardware.

70. (C) I and II only
Smartphones integrate standard telecommunication features with advanced mobile computing hardware, allowing users to make phone calls and download third-party applications from digital app stores. The claim that smartphones only support voice calls and lack internet browsing capabilities is false, confirming the validity of statements I and II.

71. (D) Processor (SoC)
The central System-on-a-Chip, or processor, acts as the computational engine of a smartphone. It integrates central processing cores, graphics engines, and digital signal processors onto one semiconductor substrate, executing system code, driving graphic displays, running applications, and processing electronic instructions rapidly.

72. (D) Blood oxygen levels
An SpO2 sensor in modern smartwatches and fitness bands measures peripheral capillary oxygen saturation. Utilizing photoplethysmography technology, the sensor shines light wavelengths through the skin to measure light absorption in blood vessels, accurately calculating the percentage of oxygenated hemoglobin circulating within the blood stream.

73. (A) Find My Device
Find My Device is a native security service built into Android smartphones. Connected to a user's registered cloud account, it allows owners

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10. (A) I and II only
Smart plugs connect to residential Wi-Fi networks, enabling users to control attached electrical appliances remotely via dedicated mobile software applications. While smart home ecosystems rely on wireless communication protocols for flexible automated scheduling, smart bulbs do not require physical wall switches exclusively, as they can also be operated digitally.

11. (B) Capture high-speed sports and outdoor action
Action cameras are specifically built to record high-resolution video and photo footage during high-speed sports, outdoor adventures, and intense physical activities. Featuring compact, ruggedized, and often waterproof enclosures, these devices incorporate advanced image stabilization and wide-angle lenses to capture stable action shots in challenging, highly dynamic environments.

12. (B) E-ink
E-ink technology is widely utilized in modern e-readers because it reflects ambient light similarly to standard printed paper. Unlike backlit liquid crystal or organic light-emitting displays, e-ink displays emit no direct glare, causing minimal eye fatigue during extended reading sessions while consuming exceptionally low battery power during operation.

13. (A) Android
Android is a ubiquitous mobile operating system built upon an open-source Linux kernel. Maintained primarily by Google, it powers billions of smartphones, tablets, and smart devices worldwide. Its open-source nature allows hardware manufacturers across the globe to customize user interfaces, integrate diverse components, and distribute software applications seamlessly.

14. (C) Apple
Operating System iOS is Apple's proprietary mobile operating environment, engineered exclusively for its hardware lineup, including iPhone smartphones. It provides tight integration between hardware components and system software, emphasizing security, smooth user performance, optimized power management, continuous software support, and a unified ecosystem of dedicated mobile applications.

15. (B) I, II and IV only
Native mobile software applications are generally downloaded through official platform application stores, whereas web applications run dynamically inside browser environments. Utility tools like system calculators operate offline seamlessly; hence, not all mobile applications require active internet connectivity to open, rendering statements regarding universal internet requirements incorrect.

16. (C) Access weather forecasts and crop market prices
Smartphones serve as essential digital tools in modern agriculture by providing farmers with instant access to critical real-time information. Using specialized agricultural applications, farmers monitor localized weather forecasts, examine market crop prices, consult agronomic advisories, and connect with agricultural trade networks, thereby improving overall farming productivity and decision-making.

17. (B) Tablet
Tablets are extensively utilized in modern digital classrooms as versatile visual tools. Featuring large interactive touch displays paired with stylus support, tablets enable students and educators to write digital notes, view interactive educational media, solve problems collaboratively, and access web resources, serving effectively as dynamic interactive slates.

18. (D) Health
Telemedicine software installed on portable gadgets like smartphones and tablets primarily advances the healthcare sector. These applications facilitate remote clinical consultations, virtual patient monitoring, medical record sharing, and prescription delivery, bridging geographical distance barriers between medical professionals and patients to enhance access to efficient healthcare services.

19. (A) A mobile device connected to a biometric scanner
Field administration and public service verification routinely employ a mobile device linked to an external biometric scanner. This integrated setup allows government officials to capture fingerprint scans or iris biometric data on location, enabling real-time electronic identity authentication, citizen attendance registration, and secure e-KYC processing in remote areas.

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20. (C) Assertion (A) is true but Reason (R) is false.
NFC technology enables secure contactless payments at retail terminals by transmitting encrypted payment data wirelessly over extremely short distances, typically under four centimetres. Consequently, the assertion regarding contactless mobile payment capabilities is entirely correct, whereas the statement claiming NFC operates across long fifty-metre distances is factually inaccurate.

21. (A) Wiping it with a soft microfibre cloth
Safely cleaning delicate touchscreen displays requires gently wiping the glass surface using a soft, dry microfibre cloth. Microfibre removes smudges, oil deposits, and dust particles effectively without scratching protective optical coatings, avoiding potential internal liquid damage caused by spraying water or harsh chemical agents directly onto electronics.

22. (D) Unified Payments Interface
UPI stands for Unified Payments Interface. Developed by the National Payments Corporation of India, this real-time payment architecture merges multiple bank accounts into a single mobile application, facilitating instant inter-bank peer-to-peer and merchant money transfers round the clock using mobile devices securely and efficiently.

23. (B) Blue light filter
Prolonged screen exposure emits high-energy visible blue light, which can disrupt circadian sleep rhythms and induce eye strain. Modern gadget operating systems include built-in blue light filter features that shift display color temperatures toward warmer tones, significantly reducing visual discomfort during extended night-time gadget operation.

24. (C) Lithium-ion (Li-ion)
Lithium-ion rechargeable batteries are the dominant power source for portable consumer devices like laptops, tablets, and smartphones. They offer high energy density, low self-discharge rates, fast recharging capabilities, and minimal memory effect, making them ideal for providing reliable electrical energy in compact electronic devices.

25. (A) P-4, Q-1, R-3, S-2
GPS determines exact geographical location coordinates, while an accelerometer measures device motion and directional orientation. Ambient light sensors measure surrounding illumination to automatically adjust screen brightness levels, and heart rate monitors analyze pulse variations to measure blood flow changes, establishing the correct functional match for gadget sensors.

26. (A) Fingerprint scanner
A fingerprint scanner is a widespread biometric security technology integrated into modern mobile hardware. By reading unique biological ridge patterns on human fingers, it provides fast, personalized, and highly secure identity authentication for unlocking screen interfaces, authorizing digital banking transactions, and accessing sensitive personal applications.

27. (B) Solid State Drive
Solid State Drives utilize non-volatile flash memory to store digital data without moving mechanical parts. Compared to traditional magnetic hard drives, solid state drives deliver significantly faster read and write speeds, resulting in rapid operating system boot times, immediate application launching, enhanced file transfer rates, and improved overall system responsiveness.

28. (B) They feature a single flexible OLED display that bends
Foldable smartphones represent an innovative mobile design trend centered around flexible organic light-emitting diode display panels. These specialized screens bend along an engineered hinge mechanism without breaking, allowing a single continuous display area to expand or fold compactly, combining tablet-sized viewing screen real estate with smartphone portability.

29. (A) An electronic device worn on the body
In consumer technology, wearable gadgets refer to electronic devices designed to be worn directly on the human body or integrated into clothing. Common examples include smartwatches, fitness bands, and smart glasses, which continuously collect biometric data, display real-time notifications, and assist users while maintaining hands-free operational convenience.

30. (B) NFC, Bluetooth, Wi-Fi
Wireless technologies vary significantly in operational range. Near Field Communication operates within extremely short distances under

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ten centimetres. Bluetooth covers short-range personal area networks up to roughly ten metres. Wi-Fi provides local area networking spanning several tens of metres, forming the correct ascending order of maximum coverage range.

31. (D) A Wi-Fi enabled smart plug
A Wi-Fi enabled smart plug exemplifies a smart home device because it incorporates network connectivity and internal relays. By plugging standard appliances into it, users can remotely control electrical power states, establish automated operation schedules, and monitor energy usage via mobile applications connected over local home internet infrastructure.

32. (C) Recharging mobile devices on the go
A power bank rated at 10,000 milliampere-hours serves as a high-capacity portable energy reservoir. It stores electrical charge internally to replenish depleted batteries in smartphones, wireless earbuds, and portable gadgets when standard AC electrical outlets are unavailable, ensuring uninterrupted device operation during travel or emergency situations.

33. (B) Wi-Fi Direct
Wi-Fi Direct is a wireless networking standard that enables two devices to establish a direct, peer-to-peer Wi-Fi connection without requiring an intermediate wireless router. It provides high-bandwidth data transmission, making it the ideal standard for screen mirroring smartphone content directly onto smart televisions smoothly.

34. (D) Counting steps taken by the user
A pedometer module within a fitness band is designed specifically to detect physical steps taken by an individual. By utilizing internal motion sensors that monitor movement acceleration and body rhythm, the pedometer calculates daily step counts, assisting users in tracking physical movement and maintaining structured exercise goals.

35. (A) 2, 1, 4, 3
Physical display sizes vary systematically across IT gadgets. Smartwatches feature the smallest screens, usually under two inches. Smartphones generally range from five to six-and-a-half inches. Tablets feature displays spanning seven to twelve inches, while laptops possess the largest displays, typically thirteen to seventeen inches, defining the precise ascending order.

36. (C) Mobile Hotspot
The Mobile Hotspot feature allows a smartphone to share its cellular internet connection wirelessly with other devices. By broadcasting a localized Wi-Fi signal, the phone acts as a portable wireless router, enabling laptops, tablets, and other nearby gadgets to access high-speed internet data seamlessly anywhere.

37. (A) It is an open-source operating system based on Linux
Android is an open-source mobile operating system developed using the Linux kernel framework. Maintained by Google alongside open-source software communities, its underlying code can be modified and deployed by various device manufacturers worldwide, supporting touch interfaces, advanced multitasking, and widespread application ecosystem compatibility across diverse hardware.

38. (D) To download and update applications
Official digital distribution platforms, such as the Apple App Store and Google Play Store, serve to distribute mobile software applications securely. Users utilize these online platforms to search, install, verify, and automatically update third-party software applications, ensuring software compatibility, system performance, and protection against malicious programs.

39. (B) E-reader
E-readers are purpose-built devices optimized for reading digital books without causing eye strain. Featuring reflective electronic ink displays, they mirror physical paper by relying on ambient external light rather than harsh internal backlighting, enabling comfortable, glare-free reading even under direct sunlight during long reading sessions.

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40. (C) Connecting two devices wirelessly to share data
Device pairing in Bluetooth technology describes the process of establishing an authenticated, secure wireless connection between two compatible devices. Once paired, the gadgets exchange security keys, allowing them to communicate automatically, stream continuous audio, or transfer digital data files over short distances reliably without repeated configuration.

ANSWERS

1. (B) A small, portable electronic device with a specific practical function
Consumer technology defines an IT gadget as a compact electronic device engineered to perform a specific practical function efficiently. These portable electronic devices integrate modern hardware components to assist users in daily tasks, personal productivity, communication, and digital entertainment, delivering targeted functional utility within a highly convenient and portable user design.

2. (D) Capacitive touchscreen operated by fingers
Modern smartphones utilize capacitive touchscreen technology as their standard primary input interface. These displays detect electrical properties of the human body, specifically finger contact, to register touch inputs accurately. This enables seamless multi-touch gestures, high sensitivity, fast response times, and smooth visual navigation without requiring heavy physical pressure or stylized stylus pens.

3. (A) Tablet
A tablet is a portable computing device featuring a touchscreen display typically measuring between 7 and 12 inches diagonally. Operating without an integrated physical keyboard, it relies on touch gestures and digital virtual keyboards for navigation, rendering it highly effective for media consumption, digital reading, note-taking, and mobile applications.

4. (C) It integrates a screen, keyboard, and battery for portability
Notebook computers incorporate a display panel, keyboard, trackpad, and rechargeable battery within a single compact chassis. Unlike traditional stationary desktop computers that require continuous AC power grid connectivity and external peripherals, laptops offer complete mobility, allowing users to run complex productivity applications and computing workflows across diverse working environments.

5. (A) Near Field Communication
NFC stands for Near Field Communication. It is a short-range wireless connectivity technology operating over distances of a few centimetres. In mobile devices, NFC facilitates quick and secure data exchange, enabling contactless digital payment processing, automated device pairing, electronic identity verification, and rapid transfer of small data files between compatible hardware.

6. (D) Accelerometer
Smartwatches track physical steps and movement patterns using a built-in accelerometer sensor. This micro-electromechanical sensor continuously measures inertial acceleration forces along multiple axes. By analyzing movement cadence, frequency, and intensity, the device algorithmically calculates step counts, physical activity levels, estimated distance traveled, and daily energetic output for users accurately.

7. (B) Track health metrics and physical activity
The primary objective of a dedicated fitness band is monitoring human physiological metrics and movement patterns. Equipped with specialized biometric sensors, it continuously tracks daily step counts, heart rate variations, blood oxygen saturation levels, sleep cycles, and active calorie expenditure, empowering users to evaluate health trends and personal physical fitness goals.

8. (C) Bluetooth
True wireless earbuds rely on Bluetooth technology to establish stable, low-power radio communication with host devices like smartphones. Bluetooth transmits digitized audio signals wirelessly across short distances, eliminating physical cord clutter while enabling clear sound delivery, active voice calling capabilities, media playback controls, and seamless pairing functionality for mobile users.

9. (D) Milliampere-hour (mAh)
Electrical storage capacity in power banks and electronic gadget batteries is standardly quantified using milliampere-hours. This measurement indicates the total electric charge a fully energized battery can deliver over time at a given voltage, helping consumers calculate how many times a power bank can recharge their specific electronic devices.

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directly on smartphones, replacing physical paper documentation.

52. (D) UPI
Unified Payments Interface provides instant, 24/7 inter-bank electronic fund transfers directly through mobile applications in India. Built on an open architecture, it allows seamless money transfers between bank accounts instantly using virtual payment addresses or mobile numbers, without requiring account numbers or manual clearance processing delays.

53. (B) Health
Smartwatches equipped with optical biometric sensors monitor human physiological parameters like pulse rate and irregular cardiac rhythms continuously. By capturing health indicators and alerting users to potential medical anomalies, these wearable gadgets operate directly within the personal healthcare sector, advancing preventative health monitoring and fitness tracking.

54. (C) Wireless radio transmissions are disabled
Enabling Airplane Mode on a mobile gadget immediately shuts down all internal wireless transceiver units, including cellular network modems, Wi-Fi antennas, Bluetooth radios, and GPS receivers. This action stops the device from emitting radio frequency interference, ensuring compliance with commercial aviation safety standards during passenger flights.

55. (D) Assertion (A) is false but Reason (R) is true.
Basic computing activities like document processing and web browsing rely on standard central processor graphics, making expensive dedicated graphics cards unnecessary. Therefore, claiming a high-end dedicated graphics card is essential for light productivity is false, whereas stating that basic tasks do not require heavy graphical hardware is entirely correct.

56. (B) Protection against dust and water entry
An IP rating, such as IP68, specifies the degree of ingress protection offered by a device enclosure against solid particles and liquids. The first digit indicates dust resistance, while the second measures fluid protection, certifying how effectively the hardware withstands immersion in water and dust exposure.

57. (D) Convert electrical appliances into app-controlled devices
A smart plug functions as an intelligent power adapter inserted between standard wall outlets and traditional electrical appliances. By linking to home wireless networks, it enables users to turn attached appliances on or off remotely, set automated operating schedules, and monitor power usage using smartphone applications.

58. (A) Stop using it, power it off, and replace the battery
A swollen electronic battery indicates an internal chemical breakdown and gas accumulation, presenting severe fire and explosion risks. The safest corrective procedure requires immediately powering off the affected device, disconnecting external chargers, ceasing usage entirely, and having the damaged battery safely replaced by qualified technical personnel.

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59. (D) Front camera and depth sensors
Facial recognition security on modern smartphones utilizes front-facing cameras paired with specialized depth sensors. These optical components capture high-resolution imagery and project thousands of invisible infrared dots to map unique three-dimensional structural contours of a user's face, providing fast and secure biometric device unlocking.

60. (A) P-4, Q-2, R-1, S-3
Mobile applications serve specific functional categories. WhatsApp is designed for real-time instant messaging, Spotify provides continuous digital audio streaming, Google Maps delivers geographical navigation and routing services, and Amazon operates as an online e-commerce platform, establishing the precise mapping across these mobile applications.

61. (B) Data could be intercepted by hackers
Unsecured public Wi-Fi networks lack encryption protection, exposing transmitted network traffic to interception. Malicious actors on the same network can deploy packet sniffing tools to capture sensitive user information, including login credentials, financial details, and personal communications, making connection to public Wi-Fi a security risk.

62. (B) Global Positioning System
GPS stands for Global Positioning System. Managed as a space-based satellite navigation

This reduces overall screen brightness and visual glare in low-light environments. On organic light-emitting diode displays, Dark Mode conserves battery power significantly because black pixels turn off completely, drawing zero electrical energy.

85. (A) P-4, Q-3, R-1, S-2
NFC facilitates contactless tap-to-pay financial transactions over very short distances, while Wi-Fi links consumer devices to home broadband routers. Bluetooth pairs wireless headphones for short-range personal audio streaming, and GPS provides space-based satellite navigation data for geographical mapping, defining the accurate functional pairing across technologies.

86. (B) Delivering higher wattage to charge the battery faster
Fast charging technology increases the electrical wattage supplied to a gadget's battery by dynamically increasing voltage and current levels from compatible wall adapters. This controlled higher power delivery recharges depleted lithium-ion battery cells significantly faster than standard baseline USB charging protocols, minimizing overall plug-in waiting times.

87. (D) Cellular support
Smartwatches equipped with integrated cellular hardware and eSIM support operate as standalone communication devices. This connectivity allows the smartwatch to register on mobile phone networks directly, enabling users to place calls, send text messages, and stream data independently without needing a nearby paired smartphone.

88. (A) Smartwatch
A smartwatch belongs directly to the wearable technology category. Designed to be worn comfortably on the wrist, it integrates computing microprocessors, digital displays, and biometric sensors, delivering smartphone notifications, health metrics, and timekeeping features directly to the user while remaining physically attached to the human body.

89. (D) To convert paper documents into digital files
Portable document scanners and smartphone scanning applications use optical image sensors and algorithms to capture physical paper documents. They crop, adjust contrast, and digitize printed text and graphics into electronic formats like PDF files, streamlining digital record storage, document sharing, and administrative workflows.

90. (A) Wireless Earbud, Smartwatch, Smartphone, Power Bank
Battery capacities scale directly with physical device size and power demands. Small wireless earbuds contain miniature batteries around 40 to 80 mAh, smartwatches house batteries around 200 to 500 mAh, smartphones feature 4000 to 5000 mAh batteries, and external power banks range from 10,000 to 20,000 mAh, establishing the correct ascending capacity sequence.

91. (B) Frequent pop-up ads and rapid battery drain
Symptoms of a malware infection on a smartphone include intrusive pop-up advertisements, unexpected computational slowness, rapid battery depletion, and high background mobile data usage. Unapproved malicious code executes hidden processes in the background, consuming processing resources and compromising system stability and user privacy.

92. (A) Subscriber Identity Module
SIM stands for Subscriber Identity Module. It is a small integrated circuit card or digital chip inserted into mobile phones. It securely stores the unique International Mobile Subscriber Identity number, network authentication keys, and user profile data needed to identify and connect a subscriber to cellular mobile networks.

93. (C) Aadhaar
Aadhaar is India's centralized identity platform managed by UIDAI. It provides digital identity verification for residents through biometric parameters and one-time passwords, enabling instant paperless authentication for government services, telecommunication activation, banking services, and financial subsidies on mobile devices securely and efficiently.

94. (C) Laptop
Laptops require significantly greater random access memory and central processing power compared to smaller single-purpose gadgets like e-readers or fitness bands. Laptops execute full-featured desktop operating systems, heavy web browsers, graphical editing tools, and complex software applications, demanding robust system hardware for multi-tasking.

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to locate lost hardware on a map, trigger loud audible alerts, lock the screen remotely, or erase sensitive stored data if the phone is misplaced or stolen.

74. (C) Google Chrome
Google Chrome is a widely deployed application software program engineered for web browsing across mobile operating systems. Unlike hardware motherboards or foundational system software like Android and iOS, application software runs on top of the underlying operating system to perform specific user-driven tasks, such as internet navigation.

75. (A) I, II and IV only
Distracted smartphone usage while operating a motor vehicle creates dangerous hazards, direct extreme heat induces thermal protective shutdowns, and maintaining proper ergonomics prevents musculoskeletal injuries. However, using frayed charging cables presents serious electrical fire and shock risks, making the third statement regarding cable safety completely incorrect.

76. (D) NFC technology
Contactless payment applications operating on mobile smartphones require active Near Field Communication hardware. When tapped near compatible point-of-sale terminals, NFC establishes a secure short-range radio connection, transferring tokenized payment authorization data wirelessly to complete financial transactions in seconds without physical contact.

77. (B) Portability and mobility
The central advantage of choosing a notebook computer over a conventional desktop setup is its portability. Integrating a display panel, keyboard, touchpad, computing hardware, and internal rechargeable battery into a single lightweight chassis allows users to transport their workstation and execute computational tasks anywhere smoothly.

78. (A) Tablet with a stylus
A tablet equipped with a digital stylus provides an ideal teaching tool for interactive modern classrooms. Educators can write handwritten notes, sketch illustrative diagrams, annotate instructional slides in real time, and mirror their tablet display wirelessly onto a large smartboard screen for interactive student learning.

79. (B) A complex alphanumeric password
A complex alphanumeric password combining uppercase and lowercase letters, numbers, and special symbols offers superior cryptographic security. Compared to basic four-digit numeric PINs, simple swipe gestures, or predictable geometric grid patterns, long complex passwords resist brute-force cracking attempts and unauthorized access far more effectively.

80. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Wireless Bluetooth earbuds stream high-fidelity audio without physical cords because Bluetooth operates using short-wavelength Ultra High Frequency radio signals to transfer digitized sound packets wirelessly. Hence, the assertion regarding wireless audio streaming is fully supported by the underlying electromagnetic principles described in the reason statement.

81. (C) Removal of the 3.5mm analog headphone jack
A widely adopted architectural trend in modern flagship smartphones is the removal of the traditional 3.5mm analog headphone jack. Manufacturers phased out this port to optimize internal device space, slim down device chassis dimensions, improve IP-rated water resistance, and promote wireless Bluetooth audio adoption.

82. (D) Wireless Fidelity
Wi-Fi stands for Wireless Fidelity. It refers to a suite of wireless networking standards based on the IEEE 802.11 specifications. Wi-Fi allows smartphones, laptops, and smart gadgets to exchange data wirelessly with local internet routers, delivering high-speed local broadband connectivity without requiring physical network cables.

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83. (A) An e-reader with e-ink
An e-reader utilizing electronic ink technology provides superior outdoor reading clarity under direct sunshine. Unlike glossy LCD screens that cause harsh light reflections and glare, e-ink displays reflect natural light like physical paper, maintaining clear text contrast and preventing visual strain in bright ambient environments.

84. (B) To reduce screen glare and save OLED battery power
Activating Dark Mode converts display user interfaces to dark backgrounds with light text.

41. (D) Digital camera
A digital camera is an electronic device designed primarily for capturing high-quality still photographs and videos. Built with optical glass lens assemblies and specialized image sensors, it optimizes photographic exposures and image resolution without integrating cellular telephone hardware or standalone cellular voice calling capabilities.

42. (A) Universal Serial Bus
USB stands for Universal Serial Bus. It represents an industry-standard plug-and-play interface specification used for connecting, communicating, and transferring power between computers and peripheral electronic devices. USB cables and ports handle fast digital data transmission alongside DC electrical power delivery across modern electronic equipment.

43. (B) It allows remote control of brightness and colour via an app
Smart bulbs advance traditional lighting by integrating wireless communication modules like Wi-Fi or Bluetooth. This connectivity allows users to adjust lighting brightness, alter color temperatures, set automated operation schedules, and trigger light scenes remotely using mobile applications or automated voice commands within smart home environments.

44. (B) A smartwatch
The Apple Watch is a prominent wearable smartwatch that combines timekeeping with mobile computing capabilities. Worn on the wrist, it runs a specialized operating system designed to display smartphone notifications, process health biometric tracking, facilitate voice communication, run lightweight apps, and monitor daily fitness metrics seamlessly.

45. (B) I and III only
Dedicated e-readers employ energy-efficient electronic ink screens that draw power almost exclusively during page refreshes, yielding exceptional battery life spanning several weeks. The Amazon Kindle represents a leading example of this device category, whereas high-refresh-rate LCD screens belong to multimedia tablets and smartphones rather than e-readers.

46. (C) Proximity sensor
A proximity sensor located near the top speaker of a smartphone detects nearby physical objects without mechanical contact. During voice calls, when the smartphone is elevated close to the user's ear, this sensor automatically turns off the display touchscreen, preventing accidental touch commands and conserving battery power.

47. (D) Manual typewriter
Modern IT gadgets are defined by electronic circuitry, digital microprocessors, and computerized functionality. Smartwatches, touch tablets, and specialized e-ink e-readers represent electronic computing gadgets, whereas a manual typewriter relies entirely on mechanical levers and key strike mechanisms without electrical components, excluding it from this classification.

48. (C) Bluetooth
Bluetooth is the primary short-range wireless standard utilized to connect peripheral input accessories like computer mice and keyboards to laptops. It establishes reliable low-power connections, eliminating desktop wire entanglements while allowing input peripherals to function seamlessly across various operational computer environments without demanding complex setup processes.

49. (B) GPS module
A smartphone's internal GPS module receives signals from orbital navigation satellites to calculate precise geographical coordinates. In precision agriculture, this positioning hardware allows specialized software applications to accurately map boundary parameters of farm fields, log soil sample locations, and assist in automated spatial field tracking tasks.

50. (B) I, III and IV only
Exposing lithium-ion batteries to excessive heat degrades internal chemistry, while using certified chargers and fast-charging technologies ensures safety and optimal power delivery. Modern lithium-ion cells do not suffer from severe memory effects; thus, forcing complete discharges to zero percent before recharging is unnecessary and scientifically inaccurate.

51. (D) DigiLocker
DigiLocker is a flagship digital initiative under the Digital India program. It provides citizens with a secure cloud-based platform to store, access, and share authentic digital versions of official documents, including driving licenses, academic certificates, and vehicle registrations,

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95. (A) Recording point-of-view video during outdoor sports
Action cameras are compact, durable video recording devices built to withstand environmental impacts, water immersion, and rapid movement. Mountable on helmets, body harnesses, or vehicles, their wide-angle lenses capture stable, high-definition point-of-view footage during dynamic outdoor sports like cycling, skiing, surfing, and motorcycling.

96. (D) Apple iPad
The iPad is a line of touchscreen tablets designed and manufactured exclusively by Apple. iPads run iPadOS, a proprietary mobile operating system derived from iOS, tailored specifically for larger displays, supporting multi-touch navigation, digital stylus inputs, multitasking, and a comprehensive library of optimized tablet applications.

97. (B) Larger than the battery capacity of the target device
When choosing a power bank, selecting an energy capacity greater than the targeted mobile device's internal battery capacity ensures complete recharges. Because energy transfer efficiency losses occur due to voltage conversion and circuit resistance, a higher-rated power bank compensates for power conversion overhead during charging cycles.

98. (C) Never sharing your UPI PIN or banking OTP with anyone
Maintaining digital financial security requires keeping confidential credentials strictly private. Users must never disclose their UPI PIN or transaction one-time passwords to anyone under any circumstances. Financial institutions never solicit private security codes, and protecting them prevents unauthorized bank transfers and financial fraud.

99. (B) Home screen shortcuts displaying quick info
Widgets are dynamic software graphical user interface elements placed directly on a smartphone or tablet home screen. They provide fast access to real-time information, such as live weather forecasts, upcoming calendar events, breaking news headlines, or clock interfaces, without requiring users to launch the underlying full application.

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100. (B) Built-in GPS
Smartwatches track geographic movement and mapping coordinates during outdoor activities using integrated GPS hardware. By receiving signals directly from global positioning satellites, the watch calculates accurate location data, movement velocity, and total distance traveled independently, plotting precise path maps without depending on connected mobile networks.

101. (A) Orientation lock
The orientation lock setting on smartphones and tablets disables automatic screen rotation triggered by internal motion sensors. By engaging this setting, users fix the display in portrait or landscape mode, preventing unwanted display shifting when tilting the device or reading while lying down horizontally.

102. (A) One Time Password
OTP stands for One Time Password. It is a dynamically generated numeric or alphanumeric security code valid for a single login session or transaction. Delivered via SMS or authentication apps, OTPs provide two-factor authentication, securing online banking, payment verifications, and digital account logins against unauthorized access.

103. (C) The official Google Play Store
The official Google Play Store provides the safest software distribution source for Android devices. Applications published on this platform undergo automated security checks via Google Play Protect, screening out malicious code, spyware, and unauthorized system exploits before software packages reach consumer devices for installation.

104. (D) They enable scheduling appliances on or off via an app
Smart plugs connect standard home electrical appliances to local Wi-Fi networks. Through dedicated smartphone management applications, users can program custom operational schedules, establish automated timers, monitor energy usage, and control electrical power supply states remotely from any location with internet access.

105. (A) I and II only
Laptop computers incorporate an integrated touchpad serving as a mouse pointer, along with internal rechargeable batteries that facilitate mobile operation without continuous mains

127. (A) Virtual Assistant software
Virtual Assistant software, such as Google Assistant, Apple Siri, or Amazon Alexa, enables hands-free device operation using spoken natural language commands. Utilizing artificial intelligence and speech recognition algorithms, these virtual assistants perform tasks like setting timers, answering queries, launching applications, and controlling smart gadgets effortlessly.

128. (A) Internet of Things
IoT stands for Internet of Things. It describes a global network of physical devices embedded with sensors, processing software, and network connectivity. This technology enables everyday physical items—such as smart plugs, appliances, and lighting systems—to collect, share, and exchange data over internet networks without requiring direct human intervention.

129. (C) Take it to an e-waste recycling centre
Disposing of degraded lithium-ion power banks safely requires taking them to authorized e-waste recycling facilities. Safe handling prevents toxic chemical leakage, soil contamination, and hazardous battery fires, ensuring metallic components and electronic materials are recovered and processed in an environmentally responsible manner.

130. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Applying a tempered glass screen protector to a smartphone is highly recommended because it provides a durable physical layer that guards the primary glass display against surface scratches and absorbs kinetic energy from accidental drops, confirming that the assertion is fully substantiated by the explanatory reason statement.

131. (C) Google
Google is the primary technology corporation responsible for developing and maintaining the open-source Android operating system. Google releases core operating system updates, maintains system architecture, oversees the Google Play ecosystem, and collaborates with hardware manufacturers globally to maintain software compatibility across the Android platform.

132. (B) Fraudulent messages seeking sensitive personal details
Phishing is a social engineering cyberattack involving deceptive messages, emails, or fake websites that impersonate legitimate organizations. These fraudulent communications trick targets into disclosing sensitive personal information, such as online banking passwords, credit card numbers, or personal identification codes, compromising digital security.

133. (B) Screen timeout
The screen timeout setting determines how long a device screen stays illuminated after user interaction stops. Extending the screen timeout duration prevents the display screen from automatically dimming and turning off while reading lengthy digital documents, news articles, or digital books without requiring constant touch inputs.

134. (D) Bluetooth headset
A Bluetooth headset is a wearable wireless audio accessory designed to provide hands-free voice calling and audio listening. Incorporating integrated speaker drivers and noise-canceling microphones, it pairs wirelessly with smartphones, enabling safe voice communications while driving, working, or performing physical tasks without holding a physical phone.

135. (A) I and II only
Action cameras feature small, durable, and lightweight enclosures built for water resistance and outdoor use. The third statement claims action cameras are meant for stationary studio portraiture, which is incorrect, as their wide-angle optics and design target dynamic, motion-heavy sports footage rather than formal studio photography.

136. (B) Sensor size and megapixel count
Essential hardware specifications to evaluate when buying a dedicated digital camera include physical sensor dimensions and megapixel resolution. Larger image sensors capture more optical light, improving dynamic range and low-light picture quality, while megapixel count determines image sharpness, crop flexibility, and maximum print sizes.

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116. (C) The larger display enhances document readability
The primary advantage of choosing a tablet over a smartphone for reading digital newspapers or complex PDF documents is its significantly larger display screen. The increased display area presents full-page newspaper layouts, small typography, and embedded graphics clearly without demanding constant manual zooming or awkward horizontal scrolling.

117. (A) Zoom
Zoom is a widely adopted video conferencing software platform running across laptops, desktops, tablets, and smartphones. It facilitates real-time online video communication, remote virtual business meetings, interactive web events, screen sharing, and distance learning classrooms over high-speed internet connections efficiently.

118. (B) A Google account (Email ID)
Setting up an Android smartphone requires linking an active Google Account. This registered email account grants access to essential cloud services, enabling automatic contact synchronization, cloud backup restoration, security authentication, and software application downloads from the Google Play Store environment.

119. (C) Unoptimised apps running background tasks
Unoptimized software applications running background tasks often cause rapid battery drain on idle smartphones. These poorly managed background processes keep the central processor active, use location services, and download data continuously over mobile networks, consuming electrical energy even when the screen is turned off.

120. (A) P-4, Q-2, R-1, S-3
Operating systems match dedicated hardware platforms specifically. Windows 11 powers personal computer laptops, Android serves as the primary operating system on Samsung Galaxy smartphones, iOS runs exclusively on Apple iPhone mobile devices, and watchOS controls the Apple Watch wearable platform, establishing the correct matching order.

121. (B) Tablet
A tablet serves as the most effective portable tool for an agricultural officer demonstrating instructional videos outdoors. Its large, bright touchscreen display provides good visibility for small group viewing, while its lightweight chassis and internal rechargeable battery allow seamless video playback directly in remote farming environments without external power.

122. (B) Portable Document Format
PDF stands for Portable Document Format. Developed by Adobe, this universal file format preserves exact document formatting, font configurations, vector graphics, and page layouts across different hardware devices, operating systems, and software platforms, making it standard for digital document publishing and sharing.

123. (C) It features internet access and streaming app support
A Smart TV differs from traditional televisions by integrating embedded computing hardware, network interfaces, and dedicated operating systems. Featuring built-in Wi-Fi or Ethernet connectivity, Smart TVs allow users to run online streaming video applications, browse web content, stream media, and access digital content directly without external decoders.

124. (B) Using a security cable lock tied to a desk
Securing a laptop physically in public workspaces requires using a physical security cable lock tethered to a fixed, immovable structure. The cable anchors into the laptop's security slot or chassis, preventing opportunistic physical theft far more effectively than software security measures or network setting adjustments can.

125. (B) Android
Android relies on the APK file format for packaging, distributing, and installing mobile applications. Short for Android Package Kit, an APK file contains all compiled code, media assets, and security manifest certificates required for manual or automated software app installation on the Android operating system platform.

126. (B) Storing data on remote internet servers
Cloud storage involves saving, managing, and backing up digital data on remote, internet-connected server facilities managed by storage providers. Instead of storing files exclusively on local physical hard drives, users access their stored photos, documents, and device backups securely over the internet from any mobile gadget.

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CHAPTER 08
Creation and Operation of Email

1. What does the term email stand for in the context of computer communication?
(A) Express Mail
(B) Electronic Mail
(C) Encrypted Mail
(D) Essential Mail

2. Which of the following best describes the primary function of an email?
(A) To perform complex mathematical calculations
(B) To edit photographs and videos
(C) To scan the computer for viruses
(D) To exchange digital messages over a computer network

3. Who is generally credited with inventing the first electronic mail system and introducing the @ symbol?
(A) Ray Tomlinson
(B) Tim Berners-Lee
(C) Vinton Cerf
(D) Charles Babbage

4. Which of the following is not a characteristic of email communication?
(A) It allows asynchronous communication
(B) It supports the attachment of files
(C) It requires both sender and receiver to be online simultaneously
(D) It delivers messages almost instantaneously

5. What is a major advantage of using email for official correspondence compared to traditional paper mail?
(A) It provides a searchable digital record of communication
(B) It requires purchasing digital stamps
(C) It automatically translates messages into any language
(D) It uses physical delivery networks which are highly secure

6. Which of the following is an example of an email service provider?
(A) Google Chrome
(B) Mozilla Firefox
(C) Microsoft Word
(D) Outlook

7. Gmail is a popular free email service developed by which company?
(A) Microsoft
(B) Google
(C) Yahoo
(D) Apple

8. Identify the odd one out from the following list of software and services.
(A) Yahoo Mail
(B) ProtonMail
(C) Excel
(D) Gmail

9. Which of the following email services is natively integrated into the Windows operating system environment?
(A) Yahoo Mail
(B) Zoho Mail
(C) AOL Mail
(D) Outlook

10. Match the email service providers in List I with their parent companies in List II.
List I: Email Service Providers
P. Gmail
Q. Outlook
R. iCloud Mail
S. Yahoo Mail
List II: Parent Companies
1. Apple
2. Microsoft
3. Google
4. Apollo Global Management (formerly Verizon Media)
(A) P-3, Q-2, R-1, S-4
(B) P-2, Q-3, R-1, S-4
(C) P-3, Q-1, R-2, S-4
(D) P-1, Q-2, R-3, S-4

11. When creating a new email ID on most public email platforms, which information is mandatorily required?
(A) Official passport identification number

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137. (B) It stores temporary data for faster app loading
Cache memory in mobile applications serves as a high-speed temporary storage space. It retains frequently used data files, image thumbnails, and system resources locally so that when a user reopens an app, the software loads content rapidly from local memory instead of downloading identical information again from remote network servers.

138. (A) P-3, Q-1, R-2, S-4
India's digital initiatives serve distinct public functions. DigiLocker provides secure storage for authentic digital personal documents, UPI processes real-time digital financial transactions, e-Hospital enables digital medical appointment bookings at public hospitals, and UMANG acts as an all-in-one portal accessing multi-sector government services, establishing the correct matching sequence.

139. (A) Bluetooth Speaker
A Bluetooth speaker functions as an audio output gadget. It receives digitized wireless sound signals transmitted from paired mobile devices over short-range Bluetooth radio frequencies, converting electronic signals back into acoustic waves using physical internal speaker drivers to play sound aloud for listeners clearly.

140. (B) I, II and IV only
Evaluating expert product reviews, checking post-sales service coverage, and calculating individual storage needs ensure informed gadget purchases. However, statement III claims higher price always guarantees superior laptop battery life, which is false because high-end laptops with power-hungry graphics cards often consume battery charge faster than cheaper, lower-powered devices.

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(B) 10 MB
(C) 25 MB
(D) 100 MB

46. If a user needs to send a video file of 150 MB via Gmail, what is the best approach since it exceeds the standard attachment limit?
(A) Rename the file extension to text format to trick the mail server limit
(B) Copy the large file onto a physical USB drive and transport it manually
(C) Upload it to cloud storage and share the file link
(D) Compress the file using standard archival tools to bypass size limits

47. Which action should a user take to respond to the sender of an email without including anyone else who was copied on the original message?
(A) Reply All
(B) Forward
(C) Reply
(D) Bounce

48. When should a user appropriately use the "Reply All" function?
(A) When communicating a private personal response intended solely for the primary sender
(B) When all original To and CC recipients need to see the response
(C) When transmitting the existing message thread directly to a non-recipient third party
(D) When removing the current email thread entirely from the primary inbox folder

49. What happens when you select "Forward" on an email you received?
(A) The original email message is immediately returned back to the primary sender with a delivery failure notice
(B) The active message thread is automatically transferred into your Sent Items folder without user input
(C) You can resend the email and attachments to a new address
(D) The entire email message alongside its attachments is permanently erased from your primary account inbox

50. Consider the following statements about replying and forwarding emails:
I. When replying to an email, original attachments are usually not included by default.
II. When forwarding an email, original attachments are typically included by default.
III. "Reply All" sends the response to everyone in the BCC field of the original email.
IV. The subject line of a forwarded email usually gets a "Fwd:" or "Fw:" prefix.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

51. In the context of email, what is a "signature"?
(A) A high-resolution digital image of a handwritten personal signature uploaded to the mail client
(B) A preset text block added at the end of outgoing emails
(C) The primary authentication security password required to log into the email account system
(D) A specialized cryptographic security key used by mail servers to encode message content

52. Which of the following is an exception to what is typically included in a professional email signature?
(A) Sender's full name
(B) Sender's designation and company
(C) Sender's contact number
(D) Sender's account password

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53. How does setting up an automated email signature improve efficiency?
(A) It eliminates typing contact details in every email
(B) It automatically organizes and sorts all incoming emails into specified subfolders
(C) It significantly expands the maximum file attachment size limit allowed by servers
(D) It acts as a firewall filter to stop all unsolicited spam emails from reaching the inbox

54. Can an email signature include a company logo or an image?
(A) No, signature settings are strictly restricted to unformatted plain text characters
(B) Yes, modern email clients support rich text and images
(C) Yes, but image insertion is exclusively permitted for internal domain recipients

(B) Complete residential street address
(C) Financial bank account information
(D) Desired account username and password

12. If a user attempts to create an email ID with a username that is already registered by someone else, what happens?
(A) The system automatically creates the account by appending random numbers
(B) The system displays an error and prompts for a different username
(C) The system immediately deletes the existing account with that username
(D) The system requires payment of a registration fee for duplicate names

13. Which of the following fields is usually optional when setting up a new email account?
(A) Complete first and last name
(B) Primary account access password
(C) Optional recovery email address
(D) Selected user account ID name

14. What is the primary purpose of adding a recovery mobile number while creating an email ID?
(A) To receive promotional offers and routine SMS marketing messages
(B) To upgrade and expand the maximum storage capacity of the inbox
(C) To automatically forward all incoming emails to the phone via SMS
(D) To regain access to the account if the password is forgotten

15. Consider the following statements regarding the creation of an email ID:
I. An email ID can contain letters and numbers.
II. Two users on the same domain can have the exact same email address.
III. Most service providers require a minimum password length for security.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

16. Which of the following is considered a strong password for an email account?
(A) password123
(B) T#7qLp9!v
(C) userfirstname
(D) 123456789

17. Why is it recommended not to use personal information like a date of birth in an email password?
(A) It unnecessarily increases the length of the account password
(B) It can be easily guessed by unauthorized individuals
(C) It explicitly violates the email service provider terms
(D) It causes technical login errors during account authentication

18. In an email address, which symbol separates the username from the domain name?
(A) @
(B) #
(C) &
(D) *

19. Identify the domain name in the email address candidate123@uppsc.up.nic.in.
(A) candidate123
(B) @
(C) uppsc.up.nic.in
(D) candidate

20. Consider the following statements about email address structures:
I. Spaces are not allowed anywhere in an email address.
II. An email address must always contain the @ symbol.
III. The domain name appears before the @ symbol.
IV. Email addresses are generally case-insensitive.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

21. Which folder temporarily holds emails that have been written but are not yet ready to be sent?
(A) Inbox
(B) Sent Items
(C) Outbox
(D) Drafts

22. What happens to a message when you click the Send button, but your device is currently not connected to the internet?
(A) It remains in the Outbox until connection is restored

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power. The third statement claims laptops lack external video connectivity ports, which is false, as modern laptops feature HDMI and USB ports for external monitors.

106. (C) E-reader
The Kindle Paperwhite is a dedicated e-reader device manufactured by Amazon. Built specifically for reading electronic books, it features a glare-free electronic ink display, built-in adjustable lighting, long battery life spanning several weeks, and water resistance, providing an optimized digital reading experience that mirrors physical printed paper.

107. (A) Wi-Fi or Zigbee
Smart lighting devices engineered for home automation networks utilize low-power wireless communication standards, primarily Wi-Fi or Zigbee protocols. These wireless standards enable smart bulbs to connect with central home automation hubs, local internet routers, and smartphone applications for centralized control, dimming management, and automated lighting schedules.

108. (C) It limits background processes to extend battery life
Power Saving Mode on smartphones extends remaining battery runtime by adjusting internal system parameters. It scales down processor clock speeds, lowers display screen brightness, reduces background application data synchronization, restricts push notifications, and turns off unnecessary visual animations, conserving stored electrical power during low battery conditions.

109. (A) Neck strain
Sustained downward head tilt while looking at a smartphone screen causes a physical strain condition often referred to as text neck. Bending the neck forward repeatedly places excessive mechanical stress on the cervical spine, surrounding ligaments, and neck muscles, leading to chronic stiffness, neck pain, and postural imbalance.

110. (B) I, II and IV only
BHIM is an Indian payment application built on UPI architecture, digital wallets require smartphones or computers, and real-time mobile banking demands reliable internet access. However, statement III is incorrect because UPI operates 24/7 continuously, allowing instant inter-bank transfers anytime outside standard physical banking business hours.

111. (C) It includes multiple camera lenses for varied photography
A multi-camera setup on modern smartphones incorporates distinct optical lens modules, such as primary wide-angle, ultra-wide, telephoto, or macro camera sensors. This hardware arrangement enables diverse photographic capabilities, including optical zooming, wider field-of-view landscape captures, detailed close-ups, and natural hardware-driven depth-of-field portrait effects.

112. (A) Short Message Service
SMS stands for Short Message Service. It is a standardized mobile communication protocol used globally to send and receive brief text-only messages between cellular mobile devices over cellular telephone networks without requiring mobile data connections or internet connectivity.

113. (C) Via a companion app over Bluetooth
Smartwatches sync recorded health, step count, and exercise data to host smartphones using short-range Bluetooth connections linked to dedicated companion applications. These mobile apps receive digitized sensor data, organize health trends over time, display fitness reports, and sync smartwatch settings back to the wearable device seamlessly.

114. (B) Smartphone
Delivery personnel rely on smartphones as mobile tools during daily field operations. Equipped with GPS navigation, cellular internet access, touch displays, and specialized logistics apps, smartphones allow drivers to follow optimal navigation routes, scan parcel barcodes, capture digital customer signatures, and confirm parcel delivery statuses in real time.

115. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Listening to personal audio through earphones at high volume levels causes noise-induced hearing loss because excessive sound pressure levels harm tiny sensory hair cells inside the cochlea. Therefore, the assertion regarding potential hearing damage is directly explained by the physiological acoustic impact detailed in the reason statement.

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35. Consider the following statements about the BCC field in an email:
I. Recipients in the To and CC fields cannot see the email addresses of the recipients in the BCC field.
II. The BCC field is useful for protecting the privacy of recipients when sending bulk emails.
III. Recipients in the BCC field cannot see who the primary recipients (To field) are.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

36. If Rahul sends an email to Amit (To), Sumit (CC), and Ravi (BCC), who among the following will NOT know that Ravi received the email?
(A) Only the primary recipient Amit
(B) Only the copied recipient Sumit
(C) Amit and Sumit
(D) The hidden recipient Ravi himself

37. Which email field is used to briefly summarize the topic or intent of the message?
(A) Subject
(B) To
(C) Body
(D) Attachment

38. Why is it considered unprofessional to send an official email with a blank Subject line?
(A) The receiving email server will automatically reject and bounce the message
(B) It forces the mail system to convert the body text into an image file
(C) The recipient lacks context about the email prior to opening it
(D) It causes security filters to automatically trigger a high-risk virus alert

39. Which of the following practices is best for writing a Subject line?
(A) Leaving it completely blank to arouse curiosity
(B) Writing the entire message in the Subject line
(C) Using a concise and descriptive phrase
(D) Typing random characters to bypass spam filters

40. Match the email interface elements in List I with their functions in List II.
List I: Interface Elements
P. To
Q. CC
R. BCC
S. Subject
List II: Functions
1. Summary of the email content
2. Hidden recipients of the email
3. Secondary recipients for information
4. Primary recipients expected to take action
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1
(D) P-1, Q-2, R-3, S-4

41. What is an email attachment?
(A) A file attached to an email message
(B) A physical paper document printed out directly from an incoming email
(C) The customized sign-off block positioned at the bottom of the email
(D) A malicious software virus embedded directly within the plain text

42. Which universal icon is typically used in email applications to represent the "Add Attachment" feature?
(A) A magnifying glass
(B) A floppy disk
(C) A gear wheel
(D) A paperclip

43. Which of the following file types can generally be sent as an email attachment?
(A) PDF documents
(B) Image files (JPEG, PNG)
(C) Word documents (DOCX)
(D) All of the above

44. Why do email service providers restrict sending executable files (e.g., .exe) as attachments?
(A) Because executable files consistently exceed standard server bandwidth limits
(B) Because they pose malware and security risks
(C) Because executable file formats are technically impossible to compress
(D) Because attachment protocols require specialized administrative software

45. What is the standard file-size limit for attachments in popular email services like Gmail and Yahoo Mail?
(A) 5 MB

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(B) It is permanently deleted from the system immediately
(C) It moves directly to the Sent Items folder without delay
(D) It automatically returns to the Inbox as an unread message

23. The folder where all incoming emails are normally stored by default is called the:
(A) Trash
(B) Spam
(C) Drafts
(D) Inbox

24. Which of the following is the most appropriate action if you want to finish writing an email later?
(A) Save it to the Drafts folder
(B) Send it to yourself
(C) Move it to the Spam folder
(D) Delete it and start over later

25. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Outbox and the Sent Items folders serve the exact same purpose in an email client.
Reason (R): Both folders store messages that have been successfully delivered to the recipient's server.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false and Reason (R) is false.

26. Where can a user find a copy of an email that has been successfully transmitted to the recipient?
(A) Drafts
(B) Outbox
(C) Trash
(D) Sent

27. When you delete an email from your Inbox, to which folder is it typically moved first?
(A) Trash
(B) Archive
(C) Spam
(D) Drafts

28. In most popular email services like Gmail and Yahoo, what automatically happens to emails in the Trash folder after a certain period (e.g., 30 days)?
(A) They are moved back to the Inbox
(B) They are permanently deleted
(C) They are forwarded to the recovery email
(D) They are converted into plain text files

29. Can a user recover an email that has been accidentally moved to the Trash folder (before it is permanently deleted)?
(A) No, once in Trash it cannot be accessed
(B) Yes, but only by paying a recovery fee
(C) Yes, by moving it back to the Inbox
(D) No, the email becomes encrypted immediately

30. Select the correct sequence of events when an email is composed, delayed due to network issues, and finally delivered.
(A) Drafts → Sent Items → Outbox
(B) Outbox → Drafts → Sent Items
(C) Drafts → Outbox → Sent Items
(D) Inbox → Outbox → Sent Items

31. Which button must be clicked to start writing a new email in most web-based email services?
(A) Reply message
(B) Forward message
(C) Attach file
(D) Compose

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32. In the context of an email, what does the abbreviation CC stand for?
(A) Carbon Copy
(B) Blind Carbon Copy
(C) Computer Copy
(D) Correct Copy

33. What is the primary difference between the To and CC fields in an email?
(A) The To field handles file attachments, while the CC field is strictly reserved for text
(B) The To field is for action recipients, while CC is for informational recipients
(C) The CC field completely hides recipient email addresses, whereas the To field displays them
(D) There is no functional or technical difference between the usage of To and CC fields

34. What does the abbreviation BCC stand for in an email interface?
(A) Background Carbon Copy
(B) Basic Carbon Copy
(C) Backup Carbon Copy
(D) Blind Carbon Copy

(D) No, media images within signatures are globally blocked by major email providers

55. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Spam folders are necessary in an email client.
Reason (R): They automatically filter and isolate unsolicited, bulk, or potentially harmful emails from the primary Inbox.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

56. Unsolicited commercial emails sent in bulk to a large number of recipients are commonly referred to as:
(A) Drafts
(B) Priority mail
(C) Starred messages
(D) Spam

57. Which term is used synonymously with Spam in many email applications?
(A) Archive
(B) Junk
(C) Trash
(D) Outbox

58. If an important email from a legitimate sender is missing from your Inbox, which folder should you check first?
(A) Outbox
(B) Sent Items
(C) Spam/Junk
(D) Drafts

59. How can a user help the email provider's system learn to correctly identify unwanted emails in the future?
(A) By flagging the email using the 'Report Spam' option
(B) By sending a direct reply to the sender politely asking to unsubscribe
(C) By forwarding the suspicious message to all personal contact entries
(D) By downloading attached media files from the message to local storage

60. Arrange the typical steps to add an attachment and send an email in the correct logical order:
1. Click Send
2. Select the file from the computer and click Open
3. Click Compose
4. Click the Attachment (paperclip) icon

(A) 3, 4, 2, 1
(B) 4, 3, 1, 2
(C) 3, 2, 4, 1
(D) 2, 3, 4, 1

61. What is the function of an "email filter" or "rule" in an email client?
(A) It routinely removes physical dust and cleans the computer screen surface automatically
(B) It strictly restricts the maximum quantity of emails an account can receive in one day
(C) It automatically sorts incoming mail based on set rules
(D) It automatically detects and corrects spelling and grammatical errors in drafted emails

62. Which of the following is not a standard way to organize emails in an inbox?
(A) Organizing messages into custom-named subfolders or color-coded labels
(B) Marking priority or urgent messages using built-in star or flag icons
(C) Locating past messages rapidly using integrated search and filter tools
(D) Printing each email and deleting its digital copy

63. What does "Archiving" an email typically do?
(A) Immediately and permanently erases the message from account storage
(B) Hides the email from Inbox while preserving it in storage
(C) Automatically routes the message back to the primary original sender
(D) Automatically converts the message content into a different language

64. Why is using a strong password not always sufficient to secure an email account?
(A) Account security settings automatically invalidate passwords every 24 hours
(B) Passwords can be stolen via phishing, breaches, or malware
(C) Complex password strings disable background email synchronization on mobile devices
(D) Mail server algorithms automatically suspend accounts using complex passwords

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65. Consider the following statements about Two-Factor Authentication (2FA) in email security:
I. It requires only a very long password to access the account.
II. It adds an extra layer of security by requiring a second form of verification, like an OTP.
III. Even if a hacker knows the password, they usually cannot access the account without the second factor.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

66. What does OTP stand for in the context of email security and account login?
(A) One-Time Password
(B) Over-The-Phone
(C) Online Text Protocol
(D) Only Tested Password

67. Which of the following methods is commonly used as a second factor in Two-Factor Authentication (2FA)?
(A) An SMS sent to a registered mobile phone
(B) An authenticator app generating a time-based code
(C) A prompt sent to an already trusted device
(D) All of the above

68. What is "Phishing" in the context of email security?
(A) The recreational activity of sharing digital photographs of personal fishing trips
(B) A fraudulent attempt to trick users into revealing sensitive data
(C) An advanced search filter feature enabling fast indexing of older inbox messages
(D) A standard cryptographic transfer protocol designed to encrypt outgoing messages

69. Which of the following is a major red flag indicating an email might be a phishing attempt?
(A) The message originates from a recognized colleague referencing an official scheduled meeting
(B) An urgent demand to click a link to avoid account suspension
(C) The incoming message features a highly specific and professional subject heading line
(D) The sender's verified email domain matches the official organizational website address

70. Match the security terms in List I with their correct descriptions in List II.
List I: Security Terms
P. Phishing
Q. Spam
R. Malware Attachment
S. Strong Password
List II: Descriptions
1. Unsolicited commercial bulk email
2. Fraudulent email designed to steal credentials
3. A complex mix of characters used for authentication
4. A harmful file hidden inside an email
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-4, Q-1, R-2, S-3

71. If you receive an email claiming you have won a lottery and asking for your bank account number, what is the best course of action?
(A) Reply with your bank details immediately to claim the prize
(B) Forward the email to all your contacts so they can win too
(C) Do not reply, mark the email as spam, and delete it
(D) Click the link provided in the email to read more

72. Which of the following URLs, if hidden behind a link in an email claiming to be from State Bank of India, is suspicious and likely a phishing link?
(A) https://www.onlinesbi.sbi/personal/banking
(B) https://www.sbi.co.in/portal/web/services
(C) http://www.login-sbi-update-account.com
(D) https://retail.onlinesbi.sbi/retail/login.htm

73. "Email etiquette" refers to:
(A) Technical network transmission protocols utilized when routing messages across servers
(B) Norms for writing polite, effective, and professional emails
(C) System administration utilities designed for restoring purged or deleted messages
(D) Specialized software applications used to format and style personal signature blocks

74. According to basic professional email etiquette, why should you avoid typing an entire email in ALL CAPS?
(A) Capital letters consume significantly more server storage space per character

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(B) It conveys shouting and can seem aggressive
(C) Server algorithms reject capital text and bounce the message back to sender
(D) Mail clients render capital text in an unreadable distorted font layout

75. Consider the following statements regarding email etiquette:
I. Always use a clear and relevant subject line.
II. It is professional to use casual text abbreviations (like 'ttyl', 'brb') in formal government communications.
III. Proofread the email for spelling and grammar before sending.
IV. Address the recipient respectfully.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

76. In official government correspondence, what tone should generally be adopted in an email?
(A) Formal and respectful
(B) Highly casual, conversational, and informal
(C) Playful, sarcastic, and intentionally humorous
(D) Expressive, highly emotional, and dramatic

77. The email platform provided by the Government of India for official communication among government employees is managed by:
(A) Tata Consultancy Services Private Limited
(B) National Informatics Centre
(C) Microsoft Corporation India
(D) Wipro Infrastructure Engineering

78. What domain extension is exclusively reserved for official email addresses of Indian government departments and ministries?
(A) .com
(B) .org
(C) .gov.in
(D) .edu.in

79. When an officer sends a confidential document via email, what is a recommended security practice?
(A) Transmitting the confidential file directly as an unencrypted plain text document
(B) Encrypting the file and sharing key via another channel
(C) Uploading the confidential attachment onto a public social media timeline feed
(D) Removing the subject heading entirely so external network sniffers ignore it

80. Select the correct sequence of steps to securely send a sensitive official document via email.
(A) Compose email → Attach document → Send → Leave laptop unlocked
(B) Create document → Save as password-protected PDF → Compose email → Attach PDF → Send
(C) Open email → Send blank email → Send another email with attachment → Call recipient
(D) Print document → Scan to public server → Send link → Delete original

81. Which file format is most commonly preferred for sending non-editable official documents via email?
(A) .docx
(B) .txt
(C) .pdf
(D) .xlsx

82. Which of the following tools is typically used if you need to email multiple large documents that together slightly exceed the attachment size limit?
(A) A standard web browser client
(B) An integrated antivirus scanning application
(C) A file compression tool
(D) A dedicated multimedia video player app

83. What is the process of "Email Account Recovery"?
(A) Restoring account access after forgotten credentials or breach
(B) Recovering previously deleted messages from the temporary Trash or Bin directory
(C) Upgrading an existing free user tier into a premium paid subscription model
(D) Modifying personal display names or contact details in account profile settings

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84. Which of the following is commonly used by email providers to verify a user's identity during the account recovery process?
(A) Entering a code sent to a pre-registered recovery mobile number
(B) Sending an OTP to a registered recovery email address
(C) Answering security questions set up during account creation
(D) All of the above

ANSWERS

1. (B) Electronic Mail
Electronic mail refers to the digital transmission of messages across computer networks using standard internet protocols. It replaced conventional paper-based correspondence by enabling individuals and organizations to send textual information, embedded media, and document attachments globally within seconds. This modern form of communication functions as a fundamental tool for digital interaction worldwide.

2. (D) To exchange digital messages over a computer network
The principal function of electronic mail is to facilitate asynchronous digital communication across local and global networks. Users can compose, dispatch, retrieve, and store messages across interconnected devices without needing live connection synchronization between parties. This efficient network protocol forms the backbone of personal, educational, and professional communication around the world today.

3. (A) Ray Tomlinson
Computer engineer Ray Tomlinson implemented the first network-based electronic mail system on the ARPANET system in 1971. He introduced the at symbol to separate the user name from the host machine identifier within network addresses. This standardized addressing structure remains the core foundation of modern electronic mail systems operating across global digital networks today.

4. (C) It requires both sender and receiver to be online simultaneously
Electronic mail is inherently an asynchronous communication system where sender and recipient interact independently of real-time availability. Messages are stored on central mail servers until the receiving party logs in to download or read them. Consequently, communication does not require both parties to be connected to the internet network at the exact same moment.

5. (A) It provides a searchable digital record of communication
Electronic correspondence maintains a structured digital archive that allows users to index, filter, and search historical messages effortlessly. Unlike physical postal records, electronic messages preserve timestamps, sender details, and attached files in cloud storage or local databases. This automated audit trail enhances efficiency and accountability in official, corporate, and governmental administrative operations.

6. (D) Outlook
Outlook is an email client and web-based service platform provided by Microsoft that manages electronic messaging, calendar scheduling, contact storage, and task allocation. Unlike web browsers or word processors, email service providers manage incoming and outgoing message protocol servers. Other platforms like Gmail and Yahoo Mail perform similar cloud-based communication services for users worldwide.

7. (B) Google
Gmail was launched in 2004 as a webmail service developed and maintained by Google. It integrated large cloud storage capacities, powerful search mechanisms, automated spam filtering algorithms, and seamless integration with other web productivity tools. Today, it stands as one of the most widely used personal and enterprise email services across global digital platforms.

8. (C) Excel
Excel is a spreadsheet software application developed by Microsoft for data calculation, financial modeling, and graphical charting, whereas Yahoo Mail, ProtonMail, and Gmail are specialized electronic mail services. Mail platforms manage messaging exchange, server synchronization, and attachment transfers, which fall outside the functional domain of analytical data manipulation tools like spreadsheet applications.

9. (D) Outlook
Microsoft Outlook is the primary email application and personal information manager

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(C) I and III only
(D) I, II and III

96. What does POP stand for in the context of email fetching protocols?
(A) Post Office Protocol
(B) Primary Object Protocol
(C) Point Outline Protocol
(D) Public Output Protocol

97. Which of the following full forms is correct for IMAP?
(A) Internal Mail Access Process
(B) Internet Message Access Protocol
(C) Intranet Mail Authorization Protocol
(D) Internet Message Application Program

98. If a user wants to access their email from a smartphone, a tablet, and a laptop, and wants all changes (like reading or deleting an email) to reflect on all devices, which receiving protocol is most appropriate?
(A) POP3
(B) IMAP
(C) HTTP
(D) FTP

99. What does the abbreviation MIME stand for in email technology?
(A) Multipurpose Internet Mail Extensions
(B) Multiple Internal Mail Processing Elements
(C) Main Internet Message Transfer Engine
(D) Machine Independent Mail Exchange Protocol

100. Match the protocols and terms in List I with their primary roles in email operation in List II.
List I: Protocols/Terms
P. SMTP
Q. IMAP
R. MIME
S. HTTPS
List II: Primary Roles
1. Protocol to securely access webmail through a browser
2. Extension allowing sending of non-text attachments (like images and audio)
3. Protocol for sending emails
4. Protocol for receiving emails and syncing across devices
(A) P-3, Q-4, R-2, S-1
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-2, R-4, S-1
(D) P-2, Q-4, R-3, S-1

101. What does the term "Email Spoofing" refer to?
(A) A humorous joke or prank message transmitted electronically between personal acquaintances
(B) Falsifying the sender address to impersonate another entity
(C) An official, authorized commercial marketing campaign delivered via subscription lists
(D) The administrative function of permanently clearing all inbox messages at the same time

102. What is "Email Bombing"?
(A) Flooding an inbox with massive email volume to crash the server
(B) An email message containing a disguised Trojan virus or malicious file attachment
(C) A specialized form of end-to-end encrypted electronic mail transmission service
(D) The practice of using hostile, aggressive, or offensive language in formal messages

103. Which section of the Information Technology Act, 2000 (India) is often invoked to handle cases of cyber crimes like sending offensive messages through communication services (including email)?
(A) Section 65 of IT Act
(B) Section 66A
(C) Section 43 of IT Act
(D) Section 66C of IT Act

104. If an employee forwards official, confidential government documents to a personal unverified email address, this constitutes:
(A) An authorized administrative data backup routine
(B) A data security breach
(C) An acceptable application of secret copy routing
(D) A recommended professional email communication standard

105. Consider the following statements about email security awareness:
I. You should never click on suspicious links from unknown senders.
II. Banks frequently ask for account passwords via email.
III. Verifying the sender's actual email address helps identify spoofing.
IV. Downloading unknown attachments can install malware on your device.
Which of the above statement(s) is/are correct?
(A) I, II, and III

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(B) I, III, and IV
(C) II, III, and IV
(D) I, II, and IV

106. In an email system, what is the role of a "CAPTCHA" during the account creation process?
(A) To confirm the user is human, preventing bots
(B) To generate complex authentication passwords during account registration
(C) To automatically compress high-resolution image attachments before sending
(D) To translate incoming email messages into the preferred default language

107. Which of the following is NOT an advantage of electronic mail?
(A) High speed of message delivery
(B) Instantaneous global reach
(C) Need for physical paper
(D) Extremely low cost of communication

108. What is the standard status of an email right after it arrives in the Inbox, before the user clicks on it?
(A) Read
(B) Draft
(C) Unread
(D) Archived

109. Which textual style is commonly used in email applications to denote that an email is unread?
(A) Strikethrough text
(B) Bold text
(C) Italicized text
(D) Grayed-out text

110. The feature that attempts to predict the next word or phrase while you are composing an email (often seen in Gmail) is based on:
(A) Decentralized blockchain network protocols
(B) Machine Learning / AI
(C) Immersive virtual reality frameworks
(D) Connected Internet of Things architectures

111. Which folder holds emails that the user has marked for deletion, allowing a window for recovery before they are permanently erased?
(A) Archive
(B) Sent
(C) Spam
(D) Trash

112. When organizing an inbox, what is a "Label" (as used in Gmail)?
(A) A physical paper tag attached to printed communication records
(B) A tag for categorizing emails while keeping them in inbox
(C) A security alert icon warning users about suspected spam messages
(D) The main subject line heading displayed in the email metadata box

113. A user wants to ensure they do not forget to respond to an important email. Which of the following features is most appropriate to use?
(A) Flag or Star the email
(B) Move the email to Trash
(C) Mark the email as Spam
(D) Reply immediately with a blank email

114. If an email fails to deliver because the recipient's email address does not exist, what typically happens?
(A) The system automatically forwards the invalid message to cyber law enforcement
(B) The sender receives a non-delivery report (NDR)
(C) The email remains stuck in the local Outbox directory indefinitely without notice
(D) The sender account is immediately flagged and blocked by network administrators

115. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is a good practice to log out of your email account when using a shared or public computer.
Reason (R): Leaving the account logged in allows the next user of the computer to read your emails and send messages from your ID.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

116. In the email address 'ro.aro@uppsc.gov.in', what does '.gov.in' signify?
(A) A commercial business located in India
(B) An educational institution in India
(C) A government entity in India
(D) A non-profit organization in India

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117. What is the main purpose of the 'Search' bar provided in an email client?
(A) To perform general web searches across the broader internet public domain
(B) To find emails by keywords, sender, or date
(C) To query online dictionaries for definitions of unfamiliar vocabulary words
(D) To check system servers for downloading available mail client software updates

118. Which of the following is considered a best practice for managing a large volume of daily emails?
(A) Systematically purging and deleting all incoming emails without opening them
(B) Using folders, labels, and filters to organize mail
(C) Automatically forwarding the entire inbox to a colleague for routine review
(D) Deactivating and disabling inbox reception functionality altogether in settings

119. A "Bounced" email implies that:
(A) The message was opened and read by the target recipient almost immediately
(B) The email message was successfully transmitted and placed in the target inbox
(C) Delivery to the intended recipient failed
(D) The message payload contained an embedded high-resolution graphics image file

120. Which of the following could be a reason for an email to bounce?
(A) The recipient's inbox is full
(B) The recipient's email address was typed incorrectly
(C) The attached file is too large for the recipient's server
(D) All of the above

121. While drafting an official email, the term 'PFA' is often used. What does it stand for?
(A) Pending File Action
(B) Please Find Attached
(C) Priority Forwarding Address
(D) Personal File Archive

122. Which of the following describes a "Draft" email?
(A) A transmitted email that was successfully received and opened by the target recipient
(B) An incoming transmission that was automatically rejected and blocked by mail servers
(C) An unsent, saved message to finish later
(D) A specialized form of message payload consisting exclusively of graphical media images

123. If you want to send the same email to 500 customers without them seeing each other's email addresses, which field should you use for their addresses?
(A) To
(B) CC
(C) BCC
(D) Subject

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124. When checking email on a web browser, the "https://" in the URL bar ensures that:
(A) Transmitted emails will be delivered to recipients at significantly higher speeds
(B) The connection to the email server is encrypted
(C) Account interaction becomes entirely immune to all phishing and spoofing scams
(D) The user gains permission to attach unlimited files without file size limits

125. Consider the following statements regarding mobile email operation:
I. Mobile email apps consume data or Wi-Fi to sync new messages.
II. You can log into multiple email accounts simultaneously on a single smartphone email app.
III. Emails cannot be deleted permanently from a mobile phone interface.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

126. An email attachment with a '.exe' extension is considered dangerous because:
(A) It represents a plain document file containing excessive text that takes too long to render
(B) It is an executable file that may run malware
(C) It uses an incompatible video streaming format that overloads and crashes display monitors
(D) It triggers automatic background forwarding of the message to all contacts in the address book

127. The process of verifying a user's identity by requiring a password and a fingerprint scan on a mobile email app is an example of:

85. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is important to keep the recovery phone number and recovery email address updated in your email account settings.
Reason (R): If you forget your password, the system will send verification codes to these recovery options to help you regain access.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

86. If you suspect your email account has been hacked, what is the most immediate action you should take upon regaining access?
(A) Delete all your contacts
(B) Change your password immediately
(C) Mark all incoming emails as spam
(D) Change the language settings of the email client

87. Which of the following actions compromises the security of an email account?
(A) Ensuring proper session logout after completing access on public workstation devices
(B) Reusing simple passwords across various online accounts
(C) Activating secondary multi-factor authentication security protocols for account access
(D) Routinely auditing active account sessions and historical login IP address logs

88. When accessing an official email account on a public computer (like in a cyber cafe), which feature is recommended to prevent the browser from saving your login credentials?
(A) Web browser bookmark manager
(B) Private browsing mode
(C) Accessibility screen magnifier tool
(D) Automated pop-up blocker extension

89. Which built-in smartphone application is commonly used by Apple users to manage their emails?
(A) Safari
(B) iMessage
(C) Mail
(D) FaceTime

90. When operating email on a mobile phone, what is a key benefit of using a dedicated email app rather than a web browser?
(A) The app operates completely offline without requiring any mobile data connection
(B) It delivers instant push notifications for incoming mail
(C) The app automatically generates and sends responses to all incoming messages
(D) The app guarantees complete system immunity against all mobile malware attacks

91. To receive emails on a mobile phone continuously, the device uses a feature commonly known as:
(A) Manual pull refresh
(B) Push email
(C) Background draft syncing
(D) Cached offline viewing

92. Identify the odd one out among these mobile applications.
(A) Gmail App
(B) Microsoft Outlook App
(C) WhatsApp
(D) Apple Mail App

93. What does SMTP stand for in relation to email?
(A) Simple Mail Transfer Protocol
(B) Secure Mail Transmission Protocol
(C) System Message Transfer Protocol
(D) Standard Mail Terminal Protocol

94. What is the primary function of the SMTP protocol?
(A) To retrieve and download inbox messages from mail servers directly to clients
(B) To route outgoing mail between clients and servers
(C) To render and format textual styling elements within the message body area
(D) To manage authentication and encrypt user passwords on remote mail systems

95. Consider the following statements about email protocols:
I. SMTP is used primarily for sending emails.
II. POP3 and IMAP are protocols used for receiving emails.
III. IMAP allows synchronization across multiple devices, whereas POP3 generally downloads and removes the email from the server.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only

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137. Which of the following best describes the 'Trash' folder in an email client?
(A) The designated primary directory where critical long-term messages are stored securely
(B) A temporary folder holding deleted emails prior to permanent removal
(C) The queue directory where outgoing unsent messages wait for active internet connection
(D) The non-delivery repository storing all messages that failed recipient server delivery

138. If a user sets up an "Out of Office" auto-reply, what does the email system do?
(A) The system rejects and permanently erases all incoming electronic messages upon receipt
(B) It sends an automated auto-reply message during a set date range
(C) The email application initiates a hardware shutdown of the device upon user logoff
(D) The mail server automatically routes every incoming communication into the Spam directory

139. Match the email functions in List I with their keyboard shortcuts in List II.
List I: Email Functions
P. Compose new email
Q. Reply
R. Reply all
S. Forward
List II: Shortcut Keys
1. c
2. r
3. a
4. f
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-1, Q-3, R-2, S-4
(D) P-4, Q-3, R-2, S-1

140. Which of the following statements about email communication is INCORRECT?
(A) An email message can be dispatched to many different recipient addresses concurrently.
(B) Email delivery is guaranteed without internet access.
(C) The Blind Carbon Copy (BCC) header field protects individual recipient address privacy.
(D) Received email records can be rapidly indexed, sorted, filtered, and searched by users.

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(A) Centralized Single Sign-On identity verification
(B) Biometric 2FA
(C) Social engineering phishing attack vector
(D) Fraudulent email spoofing mechanism

128. What should be done to an email containing a suspected Trojan virus attachment?
(A) Download the suspicious attachment to perform manual local scanning using desktop software
(B) Forward the unverified message directly to the IT support desk asking staff to execute it
(C) Avoid opening it, report as spam, and delete
(D) Send a direct reply back to the unknown sender asking if the attachment is safe to run

129. If your email password is '123456', why is it considered highly insecure?
(A) It is short, numeric, and easily guessed
(B) Security protocols on major mail servers strictly prohibit numeric digits in account passwords
(C) Numeric sequences take an excessively long time to input using virtual touchscreen keyboards
(D) Basic sequential numeric passcodes automatically trigger security expiration cycles every day

130. Consider the following statements about email etiquette in official contexts:
I. Always reply promptly to official communications.
II. Use an appropriate salutation like "Respected Sir/Madam" or "Dear [Name]".
III. Using excessive exclamation marks (!!!) is highly professional.
IV. Ensure the email is concise and to the point.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

131. In an organizational setup, what is an "Email Alias"?
(A) An official secondary system designation used to label the main spam or junk folder
(B) A deceptive spoofed identity created by external malicious attackers to breach networks
(C) A alias address that forwards incoming mail to a main account
(D) A pre-configured security prompt question answered during password recovery procedures

132. Select the correct sequence of the typical life cycle of a received email.
(A) Inbox → Read → Replied/Archived/Deleted → Trash (if deleted)
(B) Trash → Read → Inbox → Archvied
(C) Read → Inbox → Trash → Replied
(D) Archived → Read → Trash → Inbox

133. Which of the following is NOT a recommended measure to keep an email account secure?
(A) Routinely updating and changing the primary security password periodically
(B) Transmitting sensitive files over open public Wi-Fi
(C) Enabling multi-factor step verification such as two-factor authentication (2FA)
(D) Periodically auditing and reviewing connected third-party application permissions

134. What is the standard protocol used to fetch emails from a remote server to a local client that also allows managing folders directly on the server?
(A) IMAP
(B) SMTP
(C) POP3
(D) FTP

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135. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): A well-organized email folder system improves productivity.
Reason (R): It reduces the time spent searching for specific past communications.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

136. Which of the following symbols is entirely invalid and cannot be used anywhere in the username part of an email address?
(A) . (Period/Dot)
(B) _ (Underscore)
(C) " " (Space)
(D) - (Hyphen)

developed to integrate natively into the Windows operating system ecosystem. It provides unified synchronization for email accounts, desktop calendar events, contacts, and enterprise management tools, functioning as the default desktop software client for Windows office productivity suites and corporate environments.

10. (A) P-3, Q-2, R-1, S-4
Gmail is developed and operated by Google, while Outlook is Microsoft's primary email service. iCloud Mail provides mail infrastructure for Apple devices, and Yahoo Mail operates under Apollo Global Management following its acquisition from Verizon Media. Matching each platform to its parent company establishes the accurate corporate ownership structure of major global webmail systems.

11. (D) Desired account username and password
Establishing an electronic mail account requires selecting a unique username to serve as the mail address and setting a password for identity authentication. These credentials form the mandatory baseline for account creation and access security on public platforms, whereas financial accounts, physical addresses, and passport identification numbers remain irrelevant for initial account registration processes.

12. (B) The system displays an error and prompts for a different username
Every email address on a domain must be globally unique to prevent message delivery routing conflicts across network servers. When a requested username is already registered in the system database, the server halts creation, throws a warning error, and prompts the user to select an alternative, available identifier or appended variant.

13. (C) Optional recovery email address
Providing an additional secondary email address during account setup is typically optional, although recommended for password recovery and identity verification. Mandatory requirements for establishing a functional account profile include creating an account username identifier, setting an authentication password string, and providing basic profile details like the user's formal display name.

14. (D) To regain access to the account if the password is forgotten
A recovery mobile number serves as a secondary security channel for account verification during emergency access restoration. When account login passwords are forgotten, lost, or compromised, automated security platforms send a one-time verification code via SMS to the mobile device, allowing authorized account owners to reset their login credentials safely.

15. (B) I and III only
Email addresses incorporate alphanumeric character strings alongside special symbols like dots or underscores. To enforce system security, mail providers mandate minimum character lengths for user passwords. However, email addresses on a shared domain must be globally unique, meaning two users can never share identical email addresses on the exact same domain server.

16. (B) T#7qLp9!v
Password strength depends on entropy, complexity, and unpredictability across character sets. Strong passwords incorporate an unpredictable mixture of uppercase letters, lowercase letters, numerical digits, and special characters. Sequential patterns, repeated digits, or common dictionary words like personal names are easily compromised by dictionary attacks, automated brute-force guessing software, and credential harvesting tools.

17. (B) It can be easily guessed by unauthorized individuals
Personal identifiers such as birth dates, phone numbers, or family names constitute easily discoverable personal information online. Malicious actors utilize social engineering techniques, public records, and social media profiling to deduce predictable passwords. Excluding personal information from account credentials significantly reduces susceptibility to targeted brute-force attacks and unauthorized account intrusions.

18. (A) @
The at symbol serves as the universal delimiter within standard electronic mail address formatting syntax. It clearly delineates the specific user mailbox identifier on the left from the destination organization host domain name on the right, ensuring global mail routing

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protocols transmit digital communications to the correct target server destination.

19. (C) uppsc.up.nic.in
In an electronic mail address, the string preceding the at symbol represents the unique local account username, while the string following it specifies the destination domain name. For the given address, the domain part identifies the official hosting server domain responsible for receiving and routing messages to that specific mailbox.

20. (B) I, II, and IV
Standard email address syntax strictly prohibits blank spaces and requires an at symbol to separate the local username from the domain name. The domain name follows the at symbol rather than preceding it. Additionally, electronic mail systems treat addresses as case-insensitive, routing messages identically regardless of uppercase or lowercase lettering.

21. (D) Drafts
The Drafts folder acts as a dedicated temporary repository for unfinished or unsent electronic messages. When users compose an email without issuing the send command, mail clients automatically preserve the current message text, recipient headers, and attached files within this folder, allowing editing and completion at any convenient later time.

22. (A) It remains in the Outbox until connection is restored
The Outbox directory serves as a temporary dispatch queue for outgoing emails waiting for server transmission. When a user executes the send command without active network connectivity, the email client holds the message in the Outbox until an active internet connection is re-established, after which transmission finishes automatically without manual intervention.

23. (D) Inbox
The Inbox represents the default primary directory where incoming electronic mail messages are received and stored for user viewing. Unless specifically categorized by automated sorting rules, security spam filters, or custom user filters, all incoming messages successfully delivered to an email account appear automatically within this main landing inbox folder.

24. (A) Save it to the Drafts folder
Saving an incomplete message directly into the Drafts folder preserves all written text content, subject header information, attached files, and recipient addresses in secure account storage. This enables users to safely close the email editing window without risking data loss and return at any future point to finalize and send it.

25. (D) Assertion (A) is false and Reason (R) is false.
The Outbox and Sent Items folders serve distinct functional roles in mail client operations. The Outbox acts as a temporary holding area for messages pending network delivery, while Sent Items archives messages that have completed transmission to the receiving mail server. Consequently, both the assertion and reason are factually incorrect.

26. (D) Sent
The Sent folder automatically archives copies of electronic messages that have completed successful transmission through the mail server to destination recipients. This system directory provides a permanent, searchable historical record of outgoing communications, preserving message content, exact dispatch timestamps, recipient addresses, and all associated file attachments for future reference.

27. (A) Trash
When a user deletes an email from the Inbox, the mail client moves the message into the Trash or Bin directory rather than removing it permanently. This intermediate staging location prevents accidental data loss by allowing users to review deleted items and restore them to primary folders within a designated safety retention window.

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28. (B) They are permanently deleted
Most webmail platforms enforce automated retention policies for the Trash directory to manage server storage capacity. Items left in the Trash folder past a specified window, typically thirty days, are permanently purged from the system server database. Once permanently erased, these messages cannot be retrieved through standard user inbox restoration procedures.

29. (C) Yes, by moving it back to the Inbox
Messages placed in the Trash folder remain fully accessible until the automated retention

period expires or the folder is manually emptied. Users can select any item within the Trash directory and restore it to the Inbox or another personal subfolder, completely reversing the initial deletion without incurring fees or system technical penalties.

30. (C) Drafts → Outbox → Sent Items
During initial email creation, an unsent message is preserved in Drafts. When the user initiates sending, the message transfers to the Outbox while awaiting network connection and server transmission. After the mail server successfully processes and delivers the message to the destination server, the item moves permanently into Sent Items.

31. (D) Compose
Modern webmail interfaces and software email clients feature a primary action button labeled Compose to create a new message. Clicking this button launches a dedicated composition window where users enter recipient email addresses, specify subject lines, write body text, and attach files prior to dispatching electronic correspondence over the network.

32. (A) Carbon Copy
The abbreviation CC stands for Carbon Copy, deriving historically from physical carbon paper copying techniques. In electronic mail, adding addresses to the CC field sends secondary copies of the email to recipients who need to remain informed regarding the communication, even though primary action is directed toward addresses listed in the To field.

33. (B) The To field is for action recipients, while CC is for informational recipients
The To header field is designated for primary recipients who are expected to process, answer, or perform actionable duties based on the email content. Conversely, the CC field is used for secondary recipients who receive the message solely for awareness, keeping all participants visible to one another across the shared message thread.

34. (D) Blind Carbon Copy
The abbreviation BCC stands for Blind Carbon Copy in electronic mail messaging. Utilizing this field allows the sender to copy secondary recipients without revealing their email addresses to other participants. The mail server strips BCC address header information before delivering the final message copies to recipients listed in To and CC fields.

35. (A) I and II only
BCC hides recipients' email addresses from those listed in To and CC fields, protecting privacy during mass emailing. However, BCC recipients can still view the addresses of primary and copied recipients in the To and CC fields. Thus, statement III is incorrect while statements I and II accurately describe BCC functionality.

36. (C) Amit and Sumit
Mail protocols suppress the header information of addresses entered into the Blind Carbon Copy field when generating delivery copies. As a result, both the primary recipient listed in the To field and the secondary recipient listed in the CC field remain entirely unaware that a hidden blind copy was delivered to another party.

37. (A) Subject
The Subject line provides a concise summary describing the main topic, purpose, or context of an electronic mail message. Displayed prominently in the recipient's inbox listing alongside sender details, a clear subject line enables recipients to evaluate message priority, organize incoming correspondence, and search historical communication threads efficiently over time.

38. (C) The recipient lacks context about the email prior to opening it
Transmitting an official email without a subject line deprives the recipient of immediate context regarding message urgency or topic content. Blank subject headers obscure the email's intent in inbox list previews, making message management difficult, increasing the likelihood of delayed responses, and complicating future record retrieval within digital mail archives.

39. (C) Using a concise and descriptive phrase
Effective electronic mail communication relies on writing subject lines that clearly and concisely summarize the message's primary purpose. A succinct, highly descriptive phrase enables recipients to assess message priority rapidly, understand any requested actions, and locate specific correspondence threads effortlessly within searchable digital mail archives over extended periods of time.

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40. (A) P-4, Q-3, R-2, S-1
The To field designates primary action recipients, while the CC field handles secondary recipients included for information. The BCC field contains hidden recipient addresses stripped prior to delivery, and the Subject line summarizes the message topic. Matching these elements accurately defines standard user interface components in electronic mail client applications.

41. (A) A file attached to an email message
An email attachment is an external digital file sent alongside a standard text email message. Using protocol extensions like MIME, binary data including documents, images, spreadsheets, and compressed archives are encoded and transmitted together with the body text, allowing seamless file sharing between users across global computer networks.

42. (D) A paperclip
The paperclip icon serves as the standard user interface graphic for attaching digital files to electronic mail messages. Representing physical document binding, clicking the paperclip symbol opens a system file explorer window, allowing users to select local documents, images, or archives for transmission alongside the email body text content.

43. (D) All of the above
Modern electronic mail clients support various binary and text file formats as attachments. Users can attach Portable Document Format files, image files such as JPEG or PNG, and word processing documents like DOCX. Multipurpose Internet Mail Extensions encode these diverse data types into transferable binary representations for internet network dispatch.

44. (B) Because they pose malware and security risks
Executable files contain compiled code that automatically runs instructions when opened on an operating system. Because malicious actors frequently hide viruses, spyware, and ransomware inside executable attachments, email service providers block .exe files to safeguard user systems, enforce cyber security protocols, and prevent automated malware network distribution.

45. (C) 25 MB
Major consumer webmail services like Gmail and Yahoo Mail impose a standard limit of 25 megabytes per outgoing email message. This threshold covers combined body text, headers, and encoded file attachments, preventing server network bandwidth congestion and ensuring reliable transmission across distributed global electronic mail protocols.

46. (C) Upload it to cloud storage and share the file link
When an attachment exceeds standard size caps like 25 MB, uploading the file to a cloud storage service and inserting a shared access link is the standard solution. This method allows recipients to download large media files directly from cloud storage, bypassing email server size restrictions while maintaining network transmission speed.

47. (C) Reply
Selecting the Reply function creates a response message directed strictly to the original sender's email address. Unlike Reply All, which copies every address listed in the To and CC header fields, standard Reply isolates the communication to a private thread between the sender and the responding user party.

48. (B) When all original To and CC recipients need to see the response
The Reply All feature transmits a response message to the original sender and every recipient included in the To and CC fields. It is appropriately utilized during collaborative discussions where shared updates, decisions, or information must remain transparent and accessible to all active thread participants in team communications.

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49. (C) You can resend the email and attachments to a new address
Executing the Forward command allows users to share a received email message and its original attachments with a third party not included in the original thread. The email client populates a new composition window containing the message body and attached files, permitting the addition of new recipient target addresses.

50. (B) I, II, and IV
Direct replies generally omit original file attachments to optimize network bandwidth, whereas forwarding messages retains original

attachments by default. Forwarded email subject lines automatically append prefixes like Fwd or Fw. Reply All excludes BCC recipients because BCC addresses are stripped upon initial server delivery, making statement III factually incorrect.

51. (B) A preset text block added at the end of outgoing emails
An email signature is a pre-configured block of text automatically appended to the bottom of outgoing electronic mail messages. It typically includes professional contact details such as full name, job title, organizational department, contact telephone numbers, physical address, and official website links, maintaining consistent professional communication standards.

52. (D) Sender's account password
Professional email signatures routinely contain public contact identifiers, including the sender's full name, job title, company affiliation, and phone numbers. Secret authentication credentials like account passwords must never be placed in signature blocks or shared electronic correspondence, as doing so compromises account security and invites severe cyber breach risks.

53. (A) It eliminates typing contact details in every email
Configuring an automated email signature streamlines correspondence by automatically inserting standard closing details into composed messages. Eliminating the need to manually retype personal names, job titles, telephone numbers, and organizational affiliations saves time, prevents formatting discrepancies, and ensures consistent branding across all outgoing professional email communications.

54. (B) Yes, modern email clients support rich text and images
Modern webmail platforms and email client software support HTML formatting and rich text editing within signature configuration settings. This allows users to insert visual graphics, such as company logos, social media icons, or customized digital promotional banners, enhancing visual branding while remaining rendered across standard recipient mail software clients.

55. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Spam folders are essential features in email client design because automated filtering algorithms divert unwanted, bulk, commercial, and potentially harmful phishing emails away from the main Inbox. Isolating suspicious content protects users from cyber threats while preserving Inbox clarity, rendering the reason a correct explanation of the main assertion.

56. (D) Spam
Unsolicited commercial or advertisement messages dispatched in bulk to large volumes of recipients are designated as spam. Mail servers employ automated security algorithms to analyze header data, sender reputations, and body keywords, filtering these unwanted electronic communications into designated spam directories to reduce unwanted recipient inbox clutter daily.

57. (B) Junk
In electronic mail client software and webmail systems, the terms Spam and Junk Mail are used synonymously. Both refer to unsolicited, unwanted, or automated promotional messages separated from primary incoming mail. System email programs often label their secondary filtering folder as either Junk or Spam folder interchangeably.

58. (C) Spam/Junk
Automated security filters occasionally misclassify legitimate incoming messages as unsolicited bulk mail due to strict keyword detection rules or unverified sender domains. When an expected communication does not appear in the primary Inbox, users should check the Spam or Junk folder to locate and mark the false-positive message as safe.

59. (A) By flagging the email using the 'Report Spam' option
Utilizing the Report Spam action flags an unwanted message and transmits its header data to the email provider's adaptive filtering system. This trains server-side machine learning models to identify similar message patterns, suspicious domain origins, and promotional keywords, improving future spam detection accuracy across all user accounts.

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device synchronization. MIME extends mail capabilities to support non-text attachments, and HTTPS provides secure browser-based webmail access via encryption. Matching these items correctly connects each technology to its operational function within global digital email infrastructure.

101. (B) Falsifying the sender address to impersonate another entity
Email spoofing involves falsifying header details, such as the From line, to trick recipients into believing a message originates from a trusted individual or entity. Cybercriminals utilize spoofed email headers in social engineering attacks, phishing campaigns, and malware distribution to bypass initial recipient scrutiny and access sensitive user credentials.

102. (A) Flooding an inbox with massive email volume to crash the server
Email bombing is a Denial of Service attack where malicious actors flood a target inbox with thousands of automated emails. This deliberate overload consumes mail server storage capacity, exhausts network bandwidth, slows system processing, and disrupts normal email communications for targeted users or organizational mail server infrastructure.

103. (B) Section 66A
Section 66A of the Information Technology Act, 2000 was historically invoked to address cyber offenses involving offensive, menacing, or false electronic communications transmitted through communication services. Although invalidated by the Supreme Court of India in 2015, it remains historically associated with early legislative frameworks targeting electronic messaging cyber crimes.

104. (B) A data security breach
Transferring confidential government documents to personal, unencrypted email accounts violates data protection protocols and administrative cybersecurity regulations. Such unauthorized distribution constitutes a data breach, exposing official sensitive records to potential interception, network leaks, and unauthorized access outside secured public IT enterprise network infrastructure channels.

105. (B) I, III, and IV
Maintaining email security requires avoiding suspicious links, verifying sender addresses against spoofing, and refraining from downloading unknown attachments. Statement II is incorrect because legitimate financial institutions never ask for account passwords or sensitive banking PINs via electronic mail communications, making statements I, III, and IV correct.

106. (A) To confirm the user is human, preventing bots
CAPTCHA tests are security verification challenges designed to distinguish human users from automated software bots during account creation. By requiring users to interpret distorted text, identify specific image tiles, or complete visual puzzles, CAPTCHA prevents automated spam bots from registering bulk fake email account profiles.

107. (C) Need for physical paper
Eliminating paper usage is a key environmental and operational advantage of electronic mail. Email allows paperless digital transmission, high-speed delivery, instant global reach, and low operational costs. The requirement for physical paper represents an attribute of traditional postal mail rather than electronic mail digital communication systems.

108. (C) Unread
When an electronic mail message is successfully delivered to an Inbox, its default status is set to Unread. This status indicates the recipient has not yet opened or viewed the email content. Mail clients track read states to distinguish newly arrived correspondence from previously viewed inbox messages.

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109. (B) Bold text
Email clients visually distinguish unread messages from read messages in inbox list views by rendering unread items in bold text. Displaying the sender name, subject header, and timestamp in bold formatting provides immediate visual emphasis, helping users identify and prioritize new incoming correspondence quickly.

110. (B) Machine Learning / AI
Predictive email completion features, such as Google's Smart Compose, utilize artificial intelligence and natural language processing machine learning algorithms. By analyzing

70. (A) P-2, Q-1, R-4, S-3
Phishing describes fraudulent emails created to deceive users into surrendering credentials, while Spam refers to unsolicited commercial bulk messaging. Malware attachments are harmful files embedded in emails, and a Strong Password combines mixed character sets for authentication. Matching these concepts links cybersecurity terms with their precise administrative definitions.

71. (C) Do not reply, mark the email as spam, and delete it
Messages promising unsolicited lottery winnings in exchange for financial banking information represent advance-fee fraud and phishing attempts. Users should never respond to such solicitations, click embedded links, or share bank account details. Reporting the message as spam and deleting it safeguards personal data from malicious cyber fraud actors.

72. (C) http://www.login-sbi-update-account.com
Authentic web URLs for legitimate financial institutions utilize registered domain names and secure transport protocols indicated by https. The URL http://www.login-sbi-update-account.com lacks security encryption and uses an unverified, generic domain structure typical of fraudulent phishing sites created to harvest online banking credentials from unsuspecting users.

73. (B) Norms for writing polite, effective, and professional emails
Email etiquette refers to the established set of social guidelines and professional conventions governing electronic mail communications. Adhering to email etiquette involves using clear subject lines, respectful salutations, appropriate tone, precise grammar, and structured layouts to ensure digital correspondence remains polite, effective, and professional in official organizational contexts.

74. (B) It conveys shouting and can seem aggressive
In written digital communication, composing text in all capital letters is interpreted as shouting or aggressive behavior. Professional email etiquette advises against using capitalized text blocks because it impairs readability and creates a hostile impression, detracting from the polite and constructive tone required in formal business correspondence.

75. (C) I, III, and IV
Professional email etiquette requires clear subject lines, respectful greetings, and thorough proofreading to maintain standards. Informal text abbreviations like ttyl or brb are unsuitable for official governmental communications, making statement II incorrect while statements I, III, and IV accurately reflect accepted professional digital communication standards.

76. (A) Formal and respectful
Administrative standards governing public sector and official correspondence dictate that electronic emails maintain a formal, objective, and respectful tone. Professional communications should avoid informal slang, overly emotional language, or casual abbreviations to ensure clarity, decorum, and accountability in administrative records across government agencies and public departments.

77. (B) National Informatics Centre
The National Informatics Centre, operating under the Ministry of Electronics and Information Technology, manages the secure electronic mail infrastructure for the Government of India. NIC provides email services to government employees, ensuring encrypted communications, data sovereignty, and security compliance across public sector government departments and ministries.

78. (C) .gov.in
The second-level domain extension .gov.in is restricted to official email addresses and portal domains belonging to Indian government ministries, departments, and public administrative bodies. Managed by the National Informatics Centre, this extension verifies sender authenticity, prevents spoofing, and distinguishes official state correspondence from commercial or general public mail services.

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79. (B) Encrypting the file and sharing key via another channel
Transmitting confidential documents requires robust data protection methods to prevent unauthorized access or interception. Encrypting sensitive files with password protection before attaching them and transmitting the decryption key via a separate communication channel, such as secure phone call or SMS, ensures data security during transmission over digital networks.

60. (A) 3, 4, 2, 1
Attaching a file and sending an email follows a logical sequence. The process initiates by clicking Compose to open the email window. Next, clicking the paperclip icon opens the system file directory, where the user selects the file and clicks Open. Finally, clicking Send dispatches the email and attachment file.

61. (C) It automatically sorts incoming mail based on set rules
An email filter, or rule, operates as an automated processing mechanism within mail clients that categorizes incoming messages based on user-defined parameters. Filters evaluate criteria such as sender address, subject keywords, or attachment status, automatically transferring messages into assigned folders, applying category labels, or highlighting high priority items.

62. (D) Printing each email and deleting its digital copy
Standard inbox management relies on digital organization techniques, including custom folders, labels, priority flags, stars, and integrated search filters. Printing every electronic message and deleting its digital copy destroys searchability, removes automated backup records, and defeats the foundational efficiency and convenience of digital mail communication systems.

63. (B) Hides the email from Inbox while preserving it in storage
Archiving an email removes the selected message from the primary Inbox view to clean up the display space without deleting the email. Archived messages remain permanently stored in the account database under All Mail, ensuring they can be retrieved anytime using search tools or folder queries whenever needed.

64. (B) Passwords can be stolen via phishing, breaches, or malware
While complex passwords resist automated brute-force attacks, they do not safeguard against alternative compromise methods like phishing websites, credential-stealing malware, keyloggers, or third-party database data breaches. Security measures like Multi-Factor Authentication are necessary to protect account access even when a password string is stolen or compromised.

65. (B) II and III only
Two-Factor Authentication strengthens account security by requiring a secondary verification method, such as a temporary passcode, alongside standard passwords. This secondary step prevents unauthorized access even if an attacker acquires the primary password. Statement I is incorrect because 2FA relies on multi-modal factors rather than password length strength alone.

66. (A) One-Time Password
The abbreviation OTP stands for One-Time Password. It represents a dynamically generated numerical or alphanumeric code valid for a single login session or transaction over a short time frame. Widely utilized in multi-factor authentication, OTPs enhance login security by verifying identity through registered mobile authenticator applications.

67. (D) All of the above
Multi-Factor Authentication frameworks incorporate secondary security verification channels beyond account passwords. Common implementation methods include receiving an SMS passcode on a mobile device, generating time-based one-time passcodes through authenticator applications, and approving direct push notification prompts sent to trusted, verified hardware user devices.

68. (B) A fraudulent attempt to trick users into revealing sensitive data
Phishing is a social engineering cyber threat where attackers impersonate trustworthy entities via electronic mail to deceive targets. The primary objective is coercing users into revealing sensitive information, including account login credentials, financial bank details, or personal identification numbers, through fraudulent links or deceptive website landing pages.

69. (B) An urgent demand to click a link to avoid account suspension
Phishing messages often employ coercive tactics, such as psychological pressure and artificial urgency, warning recipients of imminent account closure or penalties unless they follow an embedded web link. Legitimate service organizations rarely demand immediate action or credential entry under high-pressure threats within unverified electronic mail message communications.

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90. (B) It delivers instant push notifications for incoming mail
Dedicated mobile email applications provide background synchronization that instantly delivers push notifications when new emails arrive on the server. Unlike mobile web browsers requiring manual page reloads, dedicated mail client apps notify users of incoming messages in real time, streamlining mobile communication workflows for busy users daily.

91. (B) Push email
Push email is an infrastructure protocol technology that automatically forwards incoming email messages directly from mail servers to mobile devices upon receipt. Eliminating manual polling or scheduled fetch intervals, push technology ensures mobile mail clients maintain real-time mailbox alignment and notify users immediately when new electronic correspondence arrives.

92. (C) WhatsApp
WhatsApp is a real-time instant messaging app relying on telephone contacts and chat protocols, whereas Gmail, Microsoft Outlook, and Apple Mail are standard electronic mail clients. Mail apps utilize protocols like SMTP, IMAP, and POP3 to manage asynchronous email correspondence across internet mail servers worldwide today.

93. (A) Simple Mail Transfer Protocol
The acronym SMTP stands for Simple Mail Transfer Protocol. It represents the standard TCP/IP network protocol operating at the application layer to handle outgoing electronic mail transmission. SMTP routes email messages between email clients, intermediate transmission agents, and target destination servers across global internet mail system infrastructures.

94. (B) To route outgoing mail between clients and servers
The primary function of SMTP is managing the push transmission of outgoing electronic mail. It receives composed messages from email clients and routes them across intermediate transfer agents to destination servers. Receiving protocols like IMAP or POP3 handle retrieving stored messages from mailboxes once SMTP delivers them successfully.

95. (D) I, II and III
Electronic mail operations rely on specific transport protocols. SMTP handles outgoing message transmission, whereas POP3 and IMAP function as receiving protocols. IMAP maintains bi-directional synchronization across multiple devices, while POP3 downloads messages locally and removes them from the remote server, validating all three given statements as correct.

96. (A) Post Office Protocol
POP stands for Post Office Protocol, an application-layer network protocol used by local email clients to retrieve messages from remote mail servers. Operating under version POP3, it downloads unread messages to local storage and typically deletes them from the server, making it suitable for single-device offline mail account management.

97. (B) Internet Message Access Protocol
IMAP stands for Internet Message Access Protocol. It is an application-layer protocol for retrieving email messages from remote servers. Unlike POP3, IMAP stores messages on the server while reflecting folder organization, read states, and deletions across all connected client devices through real-time server data synchronization operations.

98. (B) IMAP
Internet Message Access Protocol maintains central server synchronization, ensuring that mail state updates, such as reading, filing, flagging, or deleting emails, reflect instantly across all connected devices. This makes IMAP ideal for users accessing mail accounts across smartphones, tablets, and computers simultaneously, unlike localized POP3 retrieval protocols.

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99. (A) Multipurpose Internet Mail Extensions
MIME stands for Multipurpose Internet Mail Extensions. It extends the original ASCII email format to support non-text attachments, including images, audio, video, formatted HTML, and executable binary files. MIME enables mail clients to transmit and decode complex media content safely across standard network mail protocol channels.

100. (A) P-3, Q-4, R-2, S-1
SMTP handles outgoing mail transmission, while IMAP enables incoming mail retrieval and multi-

80. (B) Create document → Save as password-protected PDF → Compose email → Attach PDF → Send
Securely transmitting official sensitive files involves a structured sequence. The document is first created and converted into a password-protected PDF to prevent editing and unauthorized viewing. Next, the email client is opened to compose the message, attach the encrypted PDF file, and send it to the intended recipient target.

81. (C) .pdf
Portable Document Format is the standard format for exchanging official documents via email. PDFs preserve document layout, formatting styles, fonts, and inline graphics across different hardware devices and operating systems while protecting content from unintended alteration, unlike editable file formats like DOCX or TXT files.

82. (C) A file compression tool
File compression utilities reduce total file size by re-encoding data structures into compressed archive formats such as ZIP or RAR. When transmitting multiple large files that slightly exceed attachment boundaries, compression utilities reduce file sizes and bundle multiple files into a single archive for efficient electronic email dispatch.

83. (A) Restoring account access after forgotten credentials or breach
Email account recovery is the process of restoring user access to a locked, compromised, or password-forgotten email account. Service providers use recovery protocols involving registered backup phone numbers, alternative email addresses, or multi-factor security verifications to confirm account ownership and safely issue password reset credentials to users.

84. (D) All of the above
Identity verification during account recovery relies on pre-configured security channels to validate owner identity. Webmail platforms utilize SMS passcodes sent to registered mobile phones, one-time verification links dispatched to secondary recovery email accounts, and security questions established during initial account creation to authorize credential resets safely today.

85. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Maintaining updated recovery telephone numbers and secondary email addresses is essential for account security management. If primary credentials are lost or compromised, automated security systems dispatch identity verification codes to these pre-configured channels to restore access, making the reason a correct explanation of the primary assertion statement.

86. (B) Change your password immediately
Upon regaining access to an account suspected of being hacked, updating the password immediately is critical. Changing the password invalidates active compromised session tokens and blocks unauthorized actors from continuing access, securing the account before auditing security settings or connected application permissions across system platforms.

87. (B) Reusing simple passwords across various online accounts
Reusing simple passwords across multiple online platforms creates vulnerability known as credential stuffing. If a single platform suffers a security breach, attackers can use those exposed credentials to compromise the user's other accounts, including email, bypassing standard security protections across interconnected digital web platforms.

88. (B) Private browsing mode
Utilizing private browsing, or incognito mode, prevents web browsers from storing login credentials, temporary cookies, browsing history, and cached session data on shared hardware. When accessing webmail on public workstations, private browsing ensures session data is deleted upon closing the browser window, protecting user privacy and account credentials.

89. (C) Mail
Apple iOS and macOS platforms feature Apple Mail as their default integrated email application. Mail supports account configuration for major providers like iCloud, Gmail, Outlook, and Yahoo, offering offline folder access, unified inbox management, push email notifications, and digital signature integration across Apple mobile hardware device software.

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contextual phrasing, common linguistic patterns, and user writing habits, these models suggest relevant words or phrases in real time, accelerating electronic email composition drafting efficiency.

111. (D) Trash
The Trash folder serves as a safety retention directory for deleted electronic messages. When users remove emails from the Inbox or secondary folders, items transfer to Trash before permanent deletion. This grace period allows users to retrieve accidentally deleted correspondence and restore it to active mail inbox directories.

112. (B) A tag for categorizing emails while keeping them in inbox
In webmail applications like Gmail, a label acts as an organizational metadata tag assigned to emails. Unlike traditional directory folders, applying labels allows a single email message to possess multiple categories simultaneously while remaining visible in the Inbox, enabling flexible classification without creating duplicate file copies.

113. (A) Flag or Star the email
Flagging or starring an email marks the message with a visual indicator, categorizing it for high-priority attention. Mail clients consolidate flagged or starred messages into dedicated quick-access views, helping users track action items and remember to follow up on important correspondence efficiently over time.

114. (B) The sender receives a non-delivery report (NDR)
When an email cannot be delivered due to an invalid recipient address or server error, the originating mail system generates an automated Non-Delivery Report, commonly called a bounce email. This notification informs the sender of the delivery failure and specifies technical diagnostic error reason codes.

115. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Logging out of email accounts on shared or public workstations is crucial for cybersecurity. Active accounts left logged in permit subsequent users to read private communications and send unauthorized messages under the primary user's identity, rendering the reason a correct explanation of the assertion statement.

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116. (C) A government entity in India
In the domain name portion of an email address, .gov.in represents a top-level country code sub-domain structure. The .gov segment designates official government administration entities, while .in identifies the country domain for India, confirming that the account belongs to an official Indian government department or organization.

117. (B) To find emails by keywords, sender, or date
The integrated search bar in an email client allows users to query stored electronic correspondence within their account database. Users can enter search terms, sender names, recipient addresses, file attachment names, or date ranges to locate specific historical emails efficiently across all inbox mail folders.

118. (B) Using folders, labels, and filters to organize mail
Efficient email management requires systematic inbox organization tools. Creating custom subfolders, assigning visual category labels, establishing automated filter rules, and archiving handled items streamlines message workflow, prevents inbox overload, and allows quick retrieval of important official correspondence stored within account archives over time.

119. (C) Delivery to the intended recipient failed
A bounced email indicates that an outgoing email message failed to reach the intended recipient's mailbox. Bounces are classified as hard bounces from permanent errors like nonexistent email addresses or soft bounces from temporary issues like full inbox capacity or temporary mail server downtime issues.

120. (D) All of the above
Electronic mail delivery failures stem from multiple technical causes. A message bounces if the target email address is misspelled, if the recipient's inbox quota is full, or if attached files exceed receiving server limits. Each condition prevents successful delivery, triggering non-delivery reports back to the originating sender.

121. (B) Please Find Attached
The acronym PFA stands for Please Find Attached in official email shorthand. Used routinely in professional and administrative correspondence, this phrase directs the recipient's attention to supplementary documents, images, spreadsheets,

(C) The computer cannot send print commands to that printer
(D) The computer operating system will crash and perform a system reboot

22. In the context of a color inkjet printer, what does the acronym CMYK represent?
(A) Crimson, Mustard, Yellow, Khaki
(B) Cyan, Magenta, Yellow, Key (Black)
(C) Color, Monochrome, Yellow, Krypton
(D) Cyan, Maroon, Yellow, Key (Black)

23. Match the printer components in List I with their corresponding printer types in List II:
List I: (Printer Components)
P. Ink Cartridge
Q. Toner Cartridge
R. Ribbon
S. Fuser Unit
List II: (Printer Types)
1. Dot Matrix Printer
2. Inkjet Printer
3. Laser Printer
4. Laser Printer (Heating element)
(A) P-2, Q-3, R-1, S-4
(B) P-3, Q-2, R-4, S-1
(C) P-2, Q-1, R-3, S-4
(D) P-1, Q-2, R-3, S-4

24. Which of the following describes a 'Network Printer'?
(A) A printer connected to a local network for multiple users
(B) A printer attached to a single PC via USB cable without sharing
(C) A standalone unit that prints exclusively from direct memory cards
(D) A dedicated hardware printer operating solely over wired ethernet

25. What is the standard action to take if an inkjet printer produces pages with missing lines or streaks?
(A) Replace the external USB printer connection cable with a new one
(B) Restart the host desktop computer system in Safe Troubleshooting Mode
(C) Run the utility to clean print heads from printer software
(D) Change the default paper size and margin settings in the application

26. Which button on a Wi-Fi router is commonly used to establish a quick, secure connection with a wireless printer?
(A) WPS (Wi-Fi Protected Setup) button
(B) System hardware manual reset button
(C) Primary AC power switch toggle button
(D) Local LAN interface toggle switch button

27. What is meant by 'Collated Printing' when printing multiple copies of a multi-page document?
(A) Printing all duplicate copies of page 1 first, followed by all copies of page 2
(B) Formatting and printing multiple document pages onto a single paper sheet
(C) Printing all pages of the active document in complete reverse order
(D) Printing documents in complete page sequence sets

28. Which of the following is NOT a standard printer connection interface?
(A) USB
(B) VGA
(C) Wi-Fi
(D) Ethernet

29. Arrange the following steps to print a document from Microsoft Word in the correct logical order:
1. Click on the 'Print' button
2. Open the desired document
3. Select the required printer and adjust settings
4. Press Ctrl + P
Which of the following is the correct sequence?
(A) 2, 4, 3, 1
(B) 4, 2, 1, 3
(C) 2, 3, 4, 1
(D) 1, 2, 4, 3

30. Which print setting should be modified to print a document horizontally rather than vertically?
(A) Paper Size
(B) Margins
(C) Scaling
(D) Orientation

31. What is the primary difference between a network printer and a local printer?
(A) A network printer connects via router, while a local printer connects to one PC
(B) A local printer is physically connected directly to a single dedicated PC workstation
(C) A local printer operates on battery power

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132. (A) Inbox → Read → Replied/Archived/Deleted → Trash (if deleted)
A received email normally follows a standard life cycle. It first appears in the Inbox, where the recipient reads it. Depending on its importance, it may be replied to, archived for future reference, or deleted. Deleted emails are generally moved to the Trash folder before being permanently removed. This sequence helps users organize and manage email communication efficiently.

133. (B) Transmitting sensitive files over open public Wi-Fi
Sending confidential information over unsecured public Wi-Fi is not recommended because attackers may intercept the transmitted data. Good email security practices include using strong passwords, enabling two-factor authentication, and regularly reviewing third-party application permissions. These measures reduce the risk of unauthorized access and improve the overall security of an email account.

134. (A) IMAP
IMAP (Internet Message Access Protocol) allows users to access and manage emails directly on the mail server while keeping messages synchronized across multiple devices. Changes made on one device are reflected on others. Unlike POP3, IMAP supports server-side folder management and is the preferred protocol for users who access the same email account from multiple devices.

135. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
A well-organized email folder system improves productivity by helping users classify and store messages systematically. This organization reduces the time required to locate previous emails, making communication more efficient and minimizing unnecessary searching. Therefore, both the Assertion and the Reason are true, and the Reason correctly explains why maintaining organized email folders enhances overall productivity.

136. (C) " " (Space)
The username part of an email address cannot contain spaces because email address standards do not permit them. However, characters such as periods (.), underscores (_), and hyphens (-) are commonly allowed by most email providers. Including a space makes the email address invalid and prevents proper email delivery. Therefore, the space character is entirely invalid.

137. (B) A temporary folder holding deleted emails prior to permanent removal
The Trash folder stores deleted emails temporarily, allowing users to restore messages if they were removed accidentally. Emails remain there until they are permanently deleted manually or automatically after a specified period, depending on the email service. This feature acts as a safety mechanism to prevent accidental data loss before permanent deletion occurs.

138. (B) It sends an automated auto-reply message during a set date range
An "Out of Office" auto-reply automatically sends a predefined response to incoming emails during a specified period when the user is unavailable. The reply usually informs senders about the absence and may provide an alternate contact for urgent matters. This feature helps maintain professional communication without requiring the user to respond manually to every email.

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139. (A) P-1, Q-2, R-3, S-4
Many email clients provide keyboard shortcuts to improve productivity. Common shortcuts include "C" for composing a new email, "R" for replying, "A" for replying to all recipients, and "F" for forwarding a message. Learning these shortcuts helps users perform routine email tasks more quickly and efficiently without relying heavily on the mouse.

140. (B) Email delivery is guaranteed without internet access.
Email communication requires an internet connection to send and receive messages. Without internet access, emails cannot be delivered to the recipient's mail server. Email also supports sending messages to multiple recipients, using BCC to protect recipient privacy, and searching stored emails efficiently. Therefore, the statement claiming guaranteed delivery without internet access is incorrect.

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(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

42. Which wireless technology is typically used to connect a tablet to a wireless earphone or keyboard?
(A) Bluetooth
(B) Ethernet
(C) Infrared
(D) VPN

43. What is the function of the 'Airplane Mode' setting on a tablet or mobile phone?
(A) It significantly increases wireless download speeds across active networks
(B) It adjusts screen brightness to maximum levels for clear outdoor reading
(C) It automatically purges temporary app files and downloaded data stores
(D) It disables all wireless communications on the device

44. To install an app on an iPad, which account is mandatorily required?
(A) A Google Account
(B) An Apple ID
(C) A Microsoft Account
(D) An Outlook Account

45. Which of the following features is usually NOT built into a standard tablet device?
(A) Built-in camera
(B) Wi-Fi connectivity
(C) Optical CD/DVD drive
(D) Touchscreen interface

46. What does the screen rotation lock feature do on a tablet?
(A) Prevents unauthorized users from accessing the main system home screen
(B) Locks device access securely requiring authentication from the user
(C) Prevents the system display screen from timing out and going dark
(D) Locks screen orientation when tilting the device

47. Consider the following statements regarding Tablet connectivity:
I. Tablets can connect to the internet using Wi-Fi.
II. Tablets can connect to the internet using a cellular network if a SIM card is inserted.
III. Tablets cannot connect to any external devices like printers.
IV. Tablets often use Bluetooth to pair with peripheral devices.
Which of the above statements is/are correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

48. What is the primary purpose of clearing an app's cache on a tablet?
(A) To uninstall and remove the application permanently from system memory
(B) To clear temporary files and resolve minor app errors
(C) To perform an immediate update of the application to its latest release
(D) To automatically create a secure backup copy of application data in cloud

49. What is a 'Stylus' in the context of tablet operation?
(A) A protective glass cover designed for touch screens
(B) A pen-like input device for touchscreen drawing
(C) A mobile software application for document editing
(D) A detachable power charging cable for mobile devices

50. Which of the following is considered an essential maintenance practice for a tablet's physical screen?
(A) Cleaning with a soft microfiber cloth and screen solution
(B) Wiping screen surfaces using dry coarse paper towels daily
(C) Spraying liquid tap water directly onto screen displays
(D) Rubbing glass screens vigorously with industrial solvents

51. Which of the following terms describes a mobile phone that integrates the features of a mobile phone and a tablet, typically having a screen size between 5.5 and 7 inches?
(A) Palmtop
(B) Netbook
(C) Phablet
(D) Ultrabook

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10. What is a Scanner-cum-Printer commonly referred to in a modern office setup?
(A) A Multifunction Device (MFD)
(B) A Dual Processor (DP)
(C) A Network Interface Card (NIC)
(D) A Digital Output Manager (DOM)

11. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Laser printers are generally preferred over dot matrix printers for printing high-quality graphic reports in offices.
Reason (R): Laser printers operate at a higher speed and offer better resolution than dot matrix printers.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

12. Which keyboard shortcut is universally used in Windows operating systems to open the Print dialog box?
(A) Ctrl + S
(B) Ctrl + P
(C) Ctrl + Shift + P
(D) Alt + P

13. What is the most common cause of a 'Paper Jam' error in a printer?
(A) An outdated or incompatible printer software driver
(B) A completely empty ink or toner cartridge in printer
(C) Paper stuck or misfed in the printer rollers
(D) An unstable or disconnected local Wi-Fi network

14. Which feature allows a user to print on both sides of a single sheet of paper automatically?
(A) Collation printing
(B) Draft printing
(C) Spooling
(D) Duplex printing

15. What does the abbreviation USB stand for, commonly used for wired printer connections?
(A) Universal Serial Bus
(B) Universal System Bus
(C) Unified Serial Board
(D) Utility Service Block

16. What is the purpose of 'Print Spooling' in a computer system?
(A) To perform automatic cleaning cycles on print heads
(B) To store print jobs temporarily until the printer is ready
(C) To convert editable text files into static PDF documents
(D) To adjust layout margins and page alignment before printing

17. Consider the following statements regarding Network Printers:
I. They are designed to be shared among multiple users on a local area network.
II. They must be directly connected to every computer via a separate USB cable.
III. They usually have their own dedicated IP address.
IV. They can often be accessed wirelessly.
Which of the above statements is/are correct?
(A) I, II and III
(B) I, III and IV
(C) II, III and IV
(D) I, II, III and IV

18. If a laser printer outputs pages with faded text, which of the following is the most likely solution?
(A) Replacing or shaking the toner cartridge
(B) Reinstalling the printer software driver
(C) Updating the computer's operating system
(D) Changing the paper orientation to landscape

19. What consumable material is used by a laser printer to produce text and images?
(A) Liquid ink
(B) Dye-sublimation ribbon
(C) Toner powder
(D) Wax sticks

20. Which of the following is an essential requirement for configuring a wireless printer?
(A) A serial port connection
(B) A specialized server computer
(C) A continuous internet connection for offline printing
(D) A router or a Wi-Fi network

21. What happens if a user uninstalls the printer driver from their computer?
(A) The system will automatically download new software drivers from the web
(B) The printer will immediately switch over to wireless Bluetooth mode

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or PDF files accompanying the main email body text message.

122. (C) An unsent, saved message to finish later
A draft email is an unsent, work-in-progress message saved within the mail client's Drafts folder. Saving drafts allows users to compose text, add attachments, and specify recipient addresses across multiple sessions, ensuring content is safely stored until ready for final review and dispatch over network channels.

123. (C) BCC
To distribute bulk emails while preserving recipient privacy, addresses should be entered into the Blind Carbon Copy field. The BCC header prevents recipients from seeing each other's email addresses, protecting privacy, maintaining data protection standards, and reducing unsolicited spam dissemination across mass electronic email distributions.

124. (B) The connection to the email server is encrypted
The prefix https:// in a browser address bar indicates that communication between the local device and the webmail server is encrypted via SSL/TLS protocols. This encryption secures login credentials, email text, and attachment transfers against network eavesdropping, packet sniffing, and unauthorized interception on shared public network connections.

125. (A) I and II only
Mobile email applications use mobile data or Wi-Fi to synchronize new emails with the mail server. Most modern email apps also allow users to sign in to multiple email accounts simultaneously and switch between them easily. However, emails can be permanently deleted from a mobile device by removing them from the Trash folder. Therefore, statements I and II are correct, while statement III is incorrect.

126. (B) It is an executable file that may run malware
A file with the ".exe" extension is an executable program that can run software on a computer. If received through email from an unknown or untrusted source, it may contain malware such as viruses, Trojans, or ransomware. Opening such files can compromise system security and data. Therefore, executable attachments should only be opened after proper verification and antivirus scanning.

127. (B) Biometric 2FA
Biometric Two-Factor Authentication (2FA) verifies a user's identity using two different authentication factors. In this case, the password represents something the user knows, while the fingerprint represents something the user is. Combining these two factors provides stronger account security than using a password alone and significantly reduces the risk of unauthorized access to email accounts.

128. (C) Avoid opening it, report as spam, and delete
If an email contains a suspected Trojan virus attachment, it should never be opened or downloaded because it may infect the device or steal sensitive information. The safest practice is to report the email as spam or phishing, delete it immediately, and inform the organization's IT team if required. This helps protect both personal and organizational systems from cyber threats.

129. (A) It is short, numeric, and easily guessed
The password "123456" is highly insecure because it is short, consists only of sequential numbers, and is among the most commonly used passwords worldwide. Such passwords can be guessed easily or cracked using automated attacks. A secure password should include a combination of uppercase and lowercase letters, numbers, special characters, and sufficient length to improve account protection.

130. (B) I, II, and IV
Good email etiquette requires replying to official emails promptly, using a professional salutation such as "Dear" or "Respected Sir/Madam," and keeping the message concise and relevant. Excessive punctuation, including multiple exclamation marks, appears unprofessional and should be avoided in official communication. Therefore, statements I, II, and IV are correct, while statement III is incorrect.

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131. (C) An alias address that forwards incoming mail to a main account
An email alias is an additional email address linked to a primary mailbox. Messages sent to the alias are automatically forwarded to the main account without creating a separate mailbox. Organizations commonly use aliases for departments or roles, such as support or sales, allowing multiple addresses to be managed conveniently through a single email account.

without requiring a main electrical cable
(D) A network printer is specialized for images and cannot print standard text files

32. In the Windows operating system, where can a user go to see all installed printers and scanners?
(A) System Task Manager utility window
(B) Control Panel → Devices and Printers
(C) Disk Management console application
(D) System Information summary utility

33. What does 'Print Preview' allow a user to do?
(A) Cancel an active print job queued in system memory before completion
(B) View document layout on screen prior to printing
(C) Check and monitor hardware ink levels in active printer cartridges
(D) Clean and calibrate internal print heads automatically using software

34. Which of the following is a routine maintenance task for a dot matrix printer?
(A) Replacing worn printer ribbons when output turns faint
(B) Refilling liquid ink tanks with fresh liquid ink cartridges
(C) Cleaning optical laser lenses using specialized cleaning cloths
(D) Aligning digital scanner bed sensors for accurate scan resolution

35. Consider the following statements concerning printer troubleshooting:
I. If a printer is marked as 'Offline', it will continue to print immediately.
II. A corrupted printer driver can cause a printer to malfunction.
III. Cancelling a stuck print job can often resolve print queue issues.
Which of the above statements is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

36. Which of the following best describes the 'Default Printer' setting?
(A) A specialized printer permanently disabled by system security administrators
(B) The original legacy hardware printer first installed on the operating system
(C) A virtual software printer designed exclusively for generating digital PDF files
(D) The default printer automatically selected unless specified otherwise

37. What type of device is a tablet generally classified as?
(A) A high-performance supercomputer used for complex calculations
(B) A peripheral external storage device used for backing up data files
(C) A portable touchscreen computing device
(D) A desktop replacement mainframe system used in corporate data centers

38. Which component replaces the physical keyboard and mouse on a standard tablet device?
(A) An external mechanical trackball navigation device
(B) A touchscreen with a virtual onscreen keyboard
(C) An analog directional control joystick controller
(D) An optical light pen pointer for screen interaction

39. To download and install an application on an Android tablet, which pre-installed app is most commonly used?
(A) Apple App Store
(B) Microsoft Store
(C) Android Downloader
(D) Google Play Store

40. What is the first essential step when setting up a brand-new tablet for the first time?
(A) Connecting to a Wi-Fi or cellular network for initial setup
(B) Downloading and installing popular social media applications from stores
(C) Formatting internal flash storage memory to clear factory partition data
(D) Connecting the new mobile device directly to a wireless network printer

41. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Most modern tablets do not require a separate external mouse to navigate the operating system.
Reason (R): Tablets utilize a capacitive touchscreen interface that responds to finger gestures and taps.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

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CHAPTER 09

Operation of Printers, Tablets and Mobile Devices

1. Which of the following best defines a computer printer?
(A) An input hardware device that converts digital text into spoken audio
(B) An output hardware device that prints hard copies of digital text
(C) A temporary storage device that holds digital documents in memory
(D) A processing unit that formats digital text for display monitors

2. Which category of printers creates images by striking an ink ribbon against the paper?
(A) Impact printers
(B) Non-impact printers
(C) Laser printers
(D) Thermal printers

3. What technology does a laser printer primarily use to produce high-quality text and graphics?
(A) Microscopic nozzles spraying liquid ink droplets directly onto paper
(B) A heated print head applying thermal heat onto special paper
(C) A laser beam creating electrostatic images on a drum
(D) A matrix of tiny pins striking an inked ribbon onto paper

4. In the context of printer resolution, what does the abbreviation DPI stand for?
(A) Data Per Image
(B) Document Processing Index
(C) Digital Print Interface
(D) Dots Per Inch

5. Consider the following statements regarding inkjet printers:
I. They work by spraying tiny droplets of ink onto the paper.
II. They are generally considered impact printers.
III. They usually require cartridges containing liquid ink.

Which of the above statements is/are correct?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

6. What is the primary function of a printer driver?
(A) It manages electrical power distribution across internal printer components
(B) It enables operating system communication with the printer hardware
(C) It establishes and maintains the wireless network connection automatically
(D) It automatically monitors ink levels and orders new replacement cartridges

7. Which of the following is an example of a dot matrix printer?
(A) A high-speed inkjet color printer designed for home offices
(B) A wide-format plotter used for detailed architectural drawings
(C) A high-volume laser printer used in corporate office settings
(D) A character printer using a pinhead and an ink ribbon

8. When adjusting print settings, what does the term 'Orientation' refer to?
(A) Page orientation set as Portrait or Landscape
(B) The physical dimensions and paper size being used
(C) The total number of duplicate copies to print
(D) The final resolution and quality of the document

9. Which of the following paper sizes is standard for most official and government office printing in India?
(A) Legal
(B) Letter
(C) A4
(D) A3

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52. Which of the following is a widely used open-source mobile operating system developed by Google?
(A) iOS
(B) Windows Mobile
(C) Symbian
(D) Android

53. Match the mobile operating systems in List I with their primary developers in List II:
List I: (Mobile Operating Systems)
P. Android
Q. iOS
R. Windows Phone
S. HarmonyOS
List II: (Developers)
1. Apple Inc.
2. Google
3. Huawei
4. Microsoft
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-4, Q-1, R-2, S-3

54. What does the abbreviation SIM stand for in mobile telephony?
(A) System Information Management
(B) Subscriber Identity Module
(C) Single Inline Memory
(D) Subscriber Internet Mechanism

55. What is the unique 15-digit number used to identify a specific mobile phone device globally?
(A) MAC Address
(B) IP Address
(C) PNR Number
(D) IMEI Number

56. What happens when 'Data Roaming' is enabled on a mobile phone?
(A) Connecting to cellular networks outside the home coverage area
(B) Disconnecting mobile internet access and shutting down data transfers
(C) Turning the smartphone hardware into a standalone Wi-Fi hotspot router
(D) Automatically downloading all pending system updates over cell networks

57. Which type of file format is used to install applications on an Android device manually, outside the Play Store?
(A) .exe
(B) .dmg
(C) .apk
(D) .bat

58. How does a user typically update the installed apps on an Android mobile phone?
(A) Updating installed apps via Google Play Store settings
(B) Swapping the physical SIM card with a new network card
(C) Restarting the mobile hardware device several times in a row
(D) Enabling Airplane Mode to trigger automatic application updates

59. Consider the following statements concerning Mobile Security Settings:
I. A PIN code usually consists only of numbers.
II. A Pattern lock requires swiping a specific sequence on a grid of dots.
III. Biometric security can include fingerprint scanning and facial recognition.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

60. What is the common file extension used when exporting contacts from a mobile phone to be saved or transferred?
(A) .doc (Microsoft Word document file)
(B) .vcf (vCard file)
(C) .mp3 (MPEG audio file format)
(D) .pdf (Portable Document Format)

61. What does the abbreviation SMS stand for in mobile messaging?
(A) Simple Message System
(B) Secure Messaging Solution
(C) Short Message Service
(D) System Management Service

62. Which feature allows a mobile phone to share its cellular internet connection with other devices over Wi-Fi?
(A) Bluetooth Pairing
(B) Airplane Mode
(C) Screen Mirroring
(D) Mobile Hotspot

63. What is the primary benefit of taking a backup of a mobile phone to cloud services like Google Drive or iCloud?
(A) Preventing data loss if the device is damaged

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or stolen
(B) Increasing central processing unit speeds across all applications
(C) Preventing hardware devices from catching software computer viruses
(D) Upgrading mobile operating system versions to newer firmware releases

64. When a user performs a 'Factory Data Reset' on a mobile phone, what is the outcome?
(A) Installing latest operating system firmware updates automatically
(B) Erasing all user data, personal settings, and downloaded apps
(C) Extending overall battery longevity through sensor recalibration
(D) Restoring previously deleted system files back to local memory

65. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is a good security practice to regularly install operating system updates on a mobile phone.
Reason (R): Operating system updates often include patches for newly discovered security vulnerabilities.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

66. How can a user directly print a document from an Android mobile phone to a wireless network printer without a computer?
(A) Using a mobile print plugin or printer manufacturer app
(B) Removing physical memory cards and inserting them into the printer
(C) Transmitting text commands via SMS to the target printer IP address
(D) Attempting direct mobile printing since wireless protocols are unsupported

67. Which external accessory allows a user to connect a standard USB pen drive directly to a smartphone?
(A) High-Definition Multimedia Interface (HDMI) Cable
(B) Wired Local Area Network Ethernet Network Adapter
(C) USB OTG (On-The-Go) Adapter
(D) Video Graphics Array (VGA) Video Display Cable

68. Which of the following is considered bad practice for mobile battery maintenance?
(A) Utilizing original charging equipment provided by hardware manufacturers
(B) Unplugging power adapters promptly when battery charge hits maximum
(C) Disabling unused hardware features like GPS and location tracking
(D) Exposing devices to extreme heat, such as hot car dashboards

69. What is the function of the Global Positioning System (GPS) on a mobile device?
(A) It manages the battery consumption of background apps
(B) It blocks unwanted spam calls
(C) It provides location and navigation services
(D) It filters malicious websites on the browser

70. What is the primary purpose of the 'Recent Apps' or 'Task Manager' button on a mobile operating system?
(A) To uninstall unused software applications from internal device memory
(B) To view and switch between open or recent applications
(C) To search and download new software applications automatically online
(D) To adjust mobile display screen brightness levels to maximum

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71. Consider the following statements regarding SIM cards:
I. A SIM card holds the unique subscriber identification key.
II. Modern smartphones only support standard, full-sized SIM cards.
III. Dual-SIM phones allow the use of two different network services on one device.
IV. An eSIM is a digital SIM embedded directly into the device.
Which of the above statements is/are correct?
(A) I, II and III
(B) I, III and IV
(C) II, III and IV
(D) I, II, III and IV

72. What do LTE and VoLTE generally relate to in mobile phone specifications?
(A) Mobile cellular data and voice standards

(B) Digital camera sensor resolution standards
(C) Hardware display panel screen technology
(D) Fast battery charging speed technology

73. Which term describes the act of installing an application on an Android device from a source other than the official Google Play Store?
(A) Rooting
(B) Jailbreaking
(C) Sideloading
(D) Tethering

74. Why is 'Two-Factor Authentication' (2FA) recommended for mobile device accounts?
(A) Requiring two verification steps for added security
(B) Reducing cellular internet data usage by half automatically
(C) Logging users automatically into all installed applications
(D) Doubling processing speeds across system microprocessors

75. What does the abbreviation NFC stand for, commonly used for contactless mobile payments?
(A) Network File Control
(B) Node Frequency Connection
(C) National Fiber Connectivity
(D) Near Field Communication

76. In iOS devices, what is the official digital distribution platform used to download applications?
(A) Cydia Substrate Package Manager
(B) App Store
(C) Safari Mobile Web Browser
(D) Finder Desktop File Application

77. Match the mobile technology terms in List I with their appropriate descriptions in List II:
List I: (Mobile Technology Terms)
P. Airplane Mode
Q. Bluetooth
R. Mobile Hotspot
S. Wi-Fi
List II: (Descriptions)
1. Shares cellular data via a local wireless network
2. Connects the device to a local wireless router for internet
3. Disables all cellular and wireless transmissions
4. Short-range wireless pairing with accessories
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

78. Which action must typically be done first before two Bluetooth devices can communicate with each other securely?
(A) They must be connected to the same Wi-Fi network
(B) They must be restarted simultaneously
(C) They must be plugged into a power source
(D) They must be paired

79. What are 'Push Notifications' on a mobile phone?
(A) App alerts displayed on the home or lock screen
(B) Operating system software updates required by system administrators
(C) Unsolicited promotional advertisement messages transmitted via SMS
(D) Automated system reminders prompting users to recharge batteries

80. How does toggling off 'Mobile Data' affect a smartphone?
(A) Powering down hardware components and shutting down device operating systems
(B) Blocking internet access over cellular networks
(C) Preventing users from placing or receiving standard cellular voice phone calls
(D) Erasing saved cellular network connection settings and access point data

81. Which setting defines the network path for cellular data connectivity provided by an Internet Service Provider on a mobile phone?
(A) VPN (Virtual Private Network)
(B) APN (Access Point Name)
(C) MAC (Media Access Control)
(D) USB (Universal Serial Bus)

82. Which default application feature allows a user to locate their misplaced Android smartphone?
(A) Find My Device
(B) Android Locator
(C) Google Maps
(D) Play Protect

83. Which of the following is the correct sequence of actions to connect a mobile device to a standard Wi-Fi network?
(A) Open Settings → Turn on Wi-Fi → Enter Password → Select Network Name
(B) Turn on Wi-Fi → Enter Password → Open

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(D) Extracting files with a file manager or unzipping utility

124. What is 'Incognito Mode' or 'Private Browsing' on a mobile web browser?
(A) Encrypting complete mobile device file storage using hardware keys
(B) Browsing without saving local history, cookies, or site data
(C) Blocking online advertising trackers across web browsing sessions
(D) Hiding mobile IP addresses directly from internet service providers

125. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is advisable to routinely back up contacts, calendar entries, and important documents from a mobile device to a secure cloud account.
Reason (R): Cloud backup ensures that critical data can be quickly restored if the physical device is lost, stolen, or damaged.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

126. Which sensor in a smartphone detects the orientation of the device (e.g., rotating from portrait to landscape)?
(A) Infrared Proximity Distance Sensor
(B) Ambient Light Intensity Sensor
(C) Atmospheric Barometer Sensor
(D) Accelerometer / Gyroscope

127. Which mobile feature is most appropriate to use during an important government meeting to avoid audible interruptions while still receiving visual notifications?
(A) Silent or Vibrate Mode
(B) Airplane Offline Mode
(C) Complete Factory Reset
(D) Power Off Hardware Mode

128. What does the 'Clear Data' option do when selected from an app's storage settings on Android?
(A) Removing application software packages permanently from local storage
(B) Resetting the app to default state and clearing saved data
(C) Deleting temporary system cache files while preserving login details
(D) Hiding application shortcut icons from device launcher home screens

129. How can a user block unwanted or spam calls on a modern smartphone?
(A) Removing contact profiles permanently from local address books
(B) Using the 'Block Number' feature in dialer settings
(C) Enabling mobile hotspot tethering options within network settings
(D) Disabling cellular mobile data connections in system settings

130. Arrange the typical memory hierarchy of a smartphone in ascending order of access speed (slowest to fastest):
1. RAM
2. External SD Card (if present)
3. Internal Flash Storage
4. CPU Cache

Which of the following is the correct sequence?
(A) 2, 3, 1, 4
(B) 4, 1, 3, 2
(C) 3, 2, 1, 4
(D) 2, 1, 3, 4

131. Consider the following statements about Managing Storage on a mobile device:
I. Uninstalling unused applications frees up storage space.
II. Moving photos to cloud storage like Google Photos can free up local space.
III. Clearing app cache regularly helps manage storage efficiently.
IV. Keeping all background apps open increases local storage capacity.

Which of the above statements is/are correct?
(A) I, II and III
(B) II, III and IV
(C) I, III and IV
(D) I, II, III and IV

132. What is a primary limitation of using a mobile phone for extensive government document typing compared to a desktop computer?
(A) Mobile hardware devices are incapable of connecting to internet networks
(B) Mobile platforms lack software support for opening electronic PDF files
(C) Mobile devices lack compatible word

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(C) Scanning the code with a camera or QR reader app
(D) Positioning physical phone display screens directly facedown on codes

94. If an application consistently crashes upon opening on a mobile device, which of the following is an appropriate first troubleshooting step?
(A) Executing complete system factory data resets on target devices
(B) Purchasing and installing brand new replacement internal batteries
(C) Swapping existing subscriber identity module cards for new units
(D) Clearing application cache and data, or updating software

95. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is generally safer to download mobile apps from official stores like Google Play or the Apple App Store rather than third-party websites.
Reason (R): Official stores have security mechanisms like Play Protect to scan apps for malware before they are made available to users.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

96. What is 'Bloatware' in the context of mobile phones?
(A) Physical lithium battery expansion caused by hardware overheating issues
(B) Unnecessary pre-installed apps consuming local storage
(C) Malicious software threats inflating local document file sizes rapidly
(D) Remote cloud storage backup mechanisms configured for phone contacts

97. Which protocol allows Apple devices (iPhone/ iPad) to print wirelessly without needing to install additional printer drivers?
(A) Bonjour
(B) AirPrint
(C) Cloud Print
(D) iPrint

98. When an app requests 'Permissions' during installation, what is the user granting?
(A) Access rights to hardware or data like camera and contacts
(B) Full legal ownership rights over physical devices granted to developers
(C) Authorization for application software to purge core operating systems
(D) Direct authorization allowing software apps to debit user bank accounts

99. Which diagnostic mode allows a mobile device to boot up with only essential system apps running, often used for troubleshooting malicious apps?
(A) Airplane Mode
(B) Recovery Mode
(C) Safe Mode
(D) Developer Mode

100. Which feature is used to share your exact geographical position with a contact via messaging apps like WhatsApp or Maps?
(A) Share Screen
(B) Share Bluetooth
(C) Share Network
(D) Share Location

101. Consider the following statements concerning Mobile Security Practices:
I. Keeping the device OS updated is a good practice.
II. Downloading apps from unverified links in text messages is a good practice.
III. Setting a strong lock screen password is a good practice.
IV. Regularly backing up data is a good practice.
Which of the above statements is/are correct?
(A) I, II and III
(B) I, III and IV
(C) II, III and IV
(D) I, II, III and IV

102. What is a 'Voicemail' in mobile telephony?
(A) An automated artificial intelligence voice assistant software utility
(B) A recorded audio message left by unanswered callers
(C) High-definition real-time digital video calling functionality
(D) Automated text messaging software translating text into voice audio

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photosensitive drum and subsequently bonded permanently to paper fibers through high heat and pressure applied by the internal fuser assembly unit.

20. (D) A router or a Wi-Fi network
Configuring a wireless printer requires an active local Wi-Fi network facilitated by a central wireless router or access point. The printer connects to this wireless network interface, assigning it a local IP address that enables other wirelessly connected devices on the same local area network to locate and send print jobs seamlessly without physical cables.

21. (C) The computer cannot send print commands to that printer
Uninstalling a printer driver removes essential software modules that translate generic operating system print requests into device-specific hardware commands. Without this driver software installed, the operating system loses the ability to format print data correctly or communicate with the physical printer, making it impossible to transmit functional print commands to that device.

22. (B) Cyan, Magenta, Yellow, Key (Black)
CMYK represents a subtractive color model utilized in modern color printing processes. The acronym stands for Cyan, Magenta, Yellow, and Key, where Key refers to black ink used for detail and contrast. Combining varying percentages of these four primary inks allows printers to produce a full spectrum of color images on white paper surfaces.

23. (A) P-2, Q-3, R-1, S-4
Ink cartridges are used in liquid inkjet printers, whereas dry toner cartridges are utilized in laser printers. Impact dot matrix printers rely on inked ribbons struck by mechanical pins to form characters. Additionally, a fuser unit is a specialized heated component in laser printers that melts toner powder onto paper fibers permanently.

24. (A) A printer connected to a local network for multiple users
A network printer is equipped with built-in networking interface hardware, such as Ethernet or Wi-Fi connectivity, allowing it to communicate directly over a local network. This setup enables multiple computers and mobile devices connected to the same network to share a single printing resource without needing direct, individual physical connections.

25. (C) Run the utility to clean print heads from printer software
Missing lines, white streaks, or faded print output in inkjet printers are commonly caused by dried ink clogging the microscopic print head nozzles. Running the built-in head cleaning utility via printer management software flushes fresh ink through the nozzles, removing obstructions and restoring proper liquid ink flow for clear document production.

26. (A) WPS (Wi-Fi Protected Setup) button
Wi-Fi Protected Setup is a standard security protocol designed to establish fast, simple, and secure wireless connections between routers and compatible client devices without entering network passwords manually. Pressing the physical WPS button on both the wireless router and printer simultaneously links them securely on the local wireless network within seconds.

27. (D) Printing documents in complete page sequence sets
Collated printing organizes multi-page document copies sequentially in complete ordered sets, such as pages one through five for the first copy, followed by pages one through five for the second copy. This contrasts with uncollated printing, which outputs all duplicates of page one before moving on to print duplicates of page two.

28. (B) VGA
VGA (Video Graphics Array) is an analog video interface standard designed exclusively for transmitting video display signals from computer graphics cards to visual monitors or projectors. It does not support data communication protocols required by printing hardware. In contrast, USB, Wi-Fi, and Ethernet are standard interfaces for transferring data to printers.

29. (A) 2, 4, 3, 1
The logical sequence to print a document in Microsoft Word begins by opening the desired document. Next, pressing Ctrl + P opens the system print menu interface. The user then selects the targeted printer device and adjusts necessary print settings, such as page range. Finally, clicking the Print button executes the operation.

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(C) Tap Install → Search App Name → Open Play Store → Open App
(D) Open App → Tap Install → Search App Name → Open Play Store

114. Which mobile application provides Indian citizens access to a wide range of pan-India e-Government services from the Centre, States, and local bodies?
(A) UMANG
(B) DigiLocker
(C) Aarogya Setu
(D) e-Pathshala

115. Which of the following is an INCORRECT statement about mobile and tablet security?
(A) Maintaining active discoverable Bluetooth modes increases security exposure risks
(B) Configuring short automatic screen lock timeouts represents standard security
(C) Using public Wi-Fi networks for official banking is safe
(D) Storing biometric authentication profiles locally within hardware enclaves

116. Which utility allows a user to control their Android mobile phone screen from a Windows PC for official presentations?
(A) Microsoft Windows Defender Security Suite
(B) Integrated System Task Scheduler Utility
(C) Centralized Hardware Device Manager Console
(D) Phone Link app

117. What is the primary benefit of creating an 'App Folder' on a mobile phone's home screen?
(A) Hiding target applications from unauthorized system users automatically
(B) Compressing application software packages to save storage memory
(C) Grouping similar apps for easy organization and quick access
(D) Restricting background application processes from transmitting data

118. Which setting allows a mobile phone to adjust its screen brightness automatically based on surrounding light conditions?
(A) Night Light Eye Protection Mode
(B) Adaptive Brightness
(C) Auto-Rotate Screen Orientation
(D) Always-On Display Lock Screen

119. Consider the following statements regarding the mAadhaar application:
I. It allows users to carry their Aadhaar demographic information on their mobile devices.
II. It requires the registered mobile number to receive an OTP for setup.
III. It can be used to lock and unlock biometrics.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

120. In an official setup, why is an Auto Screen Lock timeout typically set to a short duration (e.g., 30 seconds or 1 minute) on devices?
(A) Preventing unauthorized access when left unattended
(B) Maximizing central processing unit performance and operation speed
(C) Automatically clearing temporary system cache and unwanted data files
(D) Disconnecting mobile devices from local Wi-Fi networks immediately

121. What happens when a user touches and holds (long-presses) an app icon on an Android home screen?
(A) Immediately uninstalling application packages from local storage memory
(B) Triggering a complete system reboot cycle on the hardware device
(C) Opening contextual menus with App Info, Remove, or Uninstall
(D) Resetting application software configurations to original defaults

122. Which feature allows a mobile device to act as an electronic wallet for making contactless payments at merchant terminals?
(A) NFC integrated with a mobile payment app
(B) Universal Serial Bus (USB) Connection Tethering
(C) Wireless Fidelity (Wi-Fi) Direct Protocol
(D) Cellular Mobile Hotspot Wireless Tethering

123. If an official document sent to a mobile phone is in a ZIP format, what must the user do to read the individual files inside it?
(A) Renaming compressed document file extensions directly to PDF format
(B) Deleting unreadable compressed files and requesting physical copies
(C) Transferring archived compressed files directly to network printers

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ANSWERS

1. (B) An output hardware device that prints hard copies of digital text
A computer printer is an external peripheral hardware device designed to process electronic data from a computer system and produce a physical representation of that information. By transferring digital text, images, and documents onto paper or other physical media, it creates hard copies. This distinguishes output devices from input hardware that feeds data into computers.

2. (A) Impact printers
Impact printers generate images or text by physically striking a mechanism against an inked ribbon placed directly over paper. Common examples include dot matrix and daisy wheel printers. This mechanical contact process produces audible sound during operation but allows these printers to create multipart carbon forms, making them distinct from non-impact printing technologies like lasers and inkjets.

3. (C) A laser beam creating electrostatic images on a drum
Laser printers utilize electrophotographic technology to deliver high-quality printing results. A precise laser beam scans across a photosensitive drum, altering its electrical charge to form an electrostatic latent image. Powdered toner is attracted to these charged areas on the drum and is subsequently transferred onto paper using intense heat and mechanical pressure during the fusing process.

4. (D) Dots Per Inch
Dots Per Inch measures spatial printing and video scanning resolution, specifically the number of individual ink dots that a device can place within a line distance of one inch. Higher values indicate greater density of printed dots, resulting in sharper detail, smoother gradients, and higher overall image quality in produced physical documents or photos.

5. (B) I and III only
Inkjet printers operate by precisely propelling microscopic droplets of liquid ink through tiny nozzles onto paper surfaces. Because they rely on liquid ink cartridges rather than physical mechanical striking mechanisms, they are classified as non-impact printers. Consequently, statements regarding liquid ink usage and droplet spraying are accurate, whereas identifying them as impact printing hardware is incorrect.

6. (B) It enables operating system communication with the printer hardware
A printer driver functions as specialized software that acts as a translator between an operating system and a physical printing device. It converts high-level printing instructions from applications into low-level page description language commands that the specific hardware model understands, ensuring accurate page rendering, correct formatting, and effective communication across hardware components.

7. (D) A character printer using a pinhead and an ink ribbon
A dot matrix printer is a character-based impact printer that forms numbers and letters using an array of small pins. These pins strike an inked ribbon against paper in precise patterns to construct dot-formed characters. Due to their durable mechanical design and impact method, dot matrix printers excel at multi-part continuous forms in administrative environments.

8. (A) Page orientation set as Portrait or Landscape
Orientation determines the directional layout in which text, images, and graphical elements are positioned across a printed page. The standard vertical alignment is termed portrait orientation, where page height exceeds width, whereas horizontal alignment is referred to as landscape orientation. Adjusting orientation alters how content is fitted and visually organized on paper sheets.

9. (C) A4
A4 paper size, measuring exactly 210 millimeters by 297 millimeters, serves as the standard page dimension for administrative, educational, and government documentation across India and many international regions. Defined by the ISO 216 standard, A4 is supported by virtually all standard desktop printers, office copiers,

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processing software applications
(D) Lacking large physical keyboards and screens reduces typing efficiency

133. Which symbol indicates a secure connection when accessing an official government website on a mobile browser?
(A) A red cross warning icon displayed on address bars
(B) A blinking star indicator icon on screen corner
(C) A padlock icon next to the URL (HTTPS)
(D) A magnifying glass search icon beside page titles

134. Which of the following best defines a 'Widget' on a smartphone or tablet?
(A) Specialized hardware attachments used for boosting Wi-Fi signals
(B) A home screen app shortcut displaying live information
(C) Malicious tracking software monitoring user activity continuously
(D) Protective physical cases encasing mobile electronic devices

135. What is the standard process to reboot a frozen or unresponsive smartphone?
(A) Placing unresponsive mobile devices onto wireless charging pads
(B) Rapidly tapping touch displays repeatedly until software responds
(C) Removing subscriber identity module cards while devices are active
(D) Holding power buttons for 10-20 seconds to force restarts

136. Why is a PUK (Personal Unblocking Key) code sometimes required on a mobile phone?
(A) Unblocking SIM cards after repeated incorrect PIN entries
(B) Unlocking device screens when security pattern passcodes are forgotten
(C) Bypassing network firewall restrictions on blocked office websites
(D) Decrypting encrypted memory cards inserted into hardware expansion slots

137. Match the security threats in List I with their descriptions in List II:
List I: (Security Threats)
P. Phishing
Q. Malware
R. Spam
S. Ransomware
List II: (Descriptions)
1. Malicious software designed to harm a device
2. Deceptive messages attempting to steal sensitive information
3. Unsolicited bulk messages
4. Software that locks the device until money is paid
(A) P-2, Q-1, R-3, S-4
(B) P-1, Q-2, R-4, S-3
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-1, S-4

138. Which mobile accessibility feature reads the content of the screen aloud for visually impaired users?
(A) TalkBack / VoiceOver
(B) Screen Magnifier Display Utility
(C) Voice Control System Application
(D) Live Caption Audio Subtitle Tool

139. When connecting a tablet to a secure office Wi-Fi network, what information is typically required?
(A) The complete physical street address where the office building sits
(B) The unique international mobile equipment identity number of tablets
(C) Biometric fingerprint verification credentials of system administrators
(D) The network SSID and correct security password

140. Which of the following actions is the most effective way to extend the daily battery life of a mobile phone when running low on power?
(A) Turning on cellular mobile hotspots to share internet access continuously
(B) Enabling Battery Saver mode and lowering screen brightness
(C) Increasing display brightness levels to maximum brightness settings
(D) Running GPS navigation applications continuously in background memory

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103. What is the standard charging and data transfer port type found on most modern, newly manufactured Android smartphones?
(A) Standard Micro-USB connector
(B) Legacy Mini-USB connector
(C) Proprietary Lightning port
(D) USB Type-C connector

104. Which of the following best describes 'Tethering'?
(A) Sharing mobile cellular internet with computers via USB
(B) Securing hardware units physically using steel anti-theft cables
(C) Synchronizing document files across smartphones and mobile tablets
(D) Locking applications permanently to prevent software uninstallation

105. What is the main function of the 'Do Not Disturb' (DND) feature on a mobile device?
(A) Blocking mobile devices from connecting to wireless internet networks
(B) Encrypting all incoming cellular text and multimedia messages end-to-end
(C) Silencing calls and notifications based on user settings
(D) Locking hardware screens completely to restrict unauthorized operation

106. Which of the following is NOT a type of mobile screen lock?
(A) PUK
(B) Pattern
(C) PIN
(D) Password

107. Match the government digital initiatives in List I with their primary use in List II:
List I: (Government Digital Initiatives)
P. DigiLocker
Q. UMANG
R. BHIM
S. Aadhaar
List II: (Primary Use)
1. Unified payment interface for money transfer
2. Unique identity number
3. Digital storage for authentic documents and certificates
4. Unified mobile application for accessing multiple government services
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-4, R-1, S-3

108. In government offices, what is a VPN used for on a mobile device or tablet?
(A) Accelerating download speeds for online streaming multimedia content
(B) Securely accessing internal office networks over public internet
(C) Bypassing hardware lock screen passcodes and biometric security checks
(D) Printing digital documents directly without physical printer connections

109. What is 'MDM' in the context of mobile devices used in a corporate or government environment?
(A) Enterprise Mobile Data Management System
(B) Multi-Device Hardware Monitoring Console
(C) Mobile Device Management
(D) Centralized Master Data Processing Module

110. Which government-developed app is commonly used for secure instant messaging among government officials in India, functioning similarly to WhatsApp?
(A) IRCTC Connect
(B) mParivahan
(C) e-NAM
(D) Sandes (GIMS)

111. To set up an official NIC (National Informatics Centre) email account on a mobile device, which protocols are typically configured?
(A) IMAP/POP3 and SMTP
(B) Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP)
(C) Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS)
(D) Transmission Control Protocol (TCP) and User Datagram Protocol (UDP)

112. When using a Scanner-cum-Printer (MFD) to digitize official documents for an e-Office system, which file format is most universally preferred and recommended?
(A) .gif
(B) .pdf
(C) .mp4
(D) .exe

113. Which of the following is the correct sequence to install a new application securely on an Android smartphone?
(A) Open Play Store → Search App Name → Tap Install → Open App
(B) Search App Name → Tap Install → Open Play Store → Open App

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and electronic document processing software applications worldwide.

10. (A) A Multifunction Device (MFD)
A Multifunction Device combines multiple document processing functionalities into a single physical office machine. By integrating scanning, printing, copying, and often faxing capabilities within one centralized hardware unit, an MFD saves physical office space, reduces overall equipment power consumption, and simplifies workflow operations for modern administrative workplaces handling digital and physical documentation.

11. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Laser printers utilize electrophotographic technology, allowing them to achieve significantly higher output speeds and superior dot resolutions compared to impact dot matrix devices. Consequently, corporate offices prefer laser printers for graphic-intensive reports because their technical superiority in resolution and speed directly enables the quick production of professional, highly detailed physical documents.

12. (B) Ctrl + P
In Microsoft Windows operating systems and across most desktop applications, pressing the keyboard combination Ctrl + P serves as a universal shortcut to launch the print command interface. This action brings up the system print dialog box, allowing users to configure page ranges, select output devices, adjust orientation, and set duplicate copies.

13. (C) Paper stuck or misfed in the printer rollers
A paper jam occurs when printing paper becomes physical trapped, misaligned, or stuck within the mechanical feed rollers or paper path inside a printer. This error halts printing operations to prevent internal mechanical damage. Common causes include using wrinkled paper, improper tray loading, static electricity sticking pages together, or worn feed roller components.

14. (D) Duplex printing
Duplex printing is an automated or manual printer feature that enables text and graphics to be printed onto both sides of a single sheet of paper. Utilizing automatic duplexing reduces paper consumption, lowers operational costs, and minimizes physical storage requirements for large document sets without requiring manual page reinsertion by the user.

15. (A) Universal Serial Bus
Universal Serial Bus is an industry standard specification establishing protocols for cables, connectors, and communication between computers and peripheral electronic devices. USB interfaces facilitate plug-and-play hardware connections, enabling high-speed data transmission and electric power supply between host systems and peripheral devices like desktop printers, keyboards, mice, and external storage drives.

16. (B) To store print jobs temporarily until the printer is ready
Print spooling is an operating system management function that places print jobs into a temporary storage buffer or disk location while the printer processes them sequentially. This background process prevents application programs from stalling, allowing users to continue working on their computers without waiting for slow mechanical printing operations to complete entirely.

17. (B) I, III and IV
Network printers connect directly to a shared network infrastructure via wired Ethernet cables or wireless Wi-Fi interfaces, assigning them dedicated IP addresses. This architectural setup allows multiple network users to send print jobs simultaneously without requiring individual physical USB connections to every computer, rendering statement II incorrect while confirming statements I, III, and IV.

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18. (A) Replacing or shaking the toner cartridge
Faded or uneven print output in laser printers typically indicates an insufficient or unevenly distributed supply of dry toner powder inside the cartridge. Gently removing and shaking the toner cartridge redistributes remaining powder evenly across the internal roller, providing a temporary solution, while replacing the depleted cartridge restores full contrast and print clarity.

19. (C) Toner powder
Laser printers utilize dry toner powder, a fine mixture of plastic particles, carbon black, and coloring agents, as their primary consumable material. Unlike liquid ink, toner is electrostatically attracted to a charged

Settings → Select Network Name
(C) Open Settings → Turn on Wi-Fi → Select Network Name → Enter Password
(D) Select Network Name → Enter Password → Open Settings → Turn on Wi-Fi

84. What is a 'Micro-SIM' or 'Nano-SIM' in relation to standard SIM cards?
(A) They are SIM cards with larger memory capacity
(B) They are purely software-based SIMs with no physical form
(C) They are SIM cards exclusively used for tablets
(D) They are physical size variations of standard SIM cards

85. Which of the following is an INCORRECT statement regarding mobile operating systems?
(A) iOS software is developed exclusively for proprietary Apple mobile hardware
(B) Android operating systems allow placing dynamic widgets on home screens
(C) MS-DOS is the primary OS for modern smartphones
(D) Android mobile applications are written using Java or Kotlin languages

86. What do the terms 'Jailbreaking' (for iOS) and 'Rooting' (for Android) generally mean?
(A) Updating system software to official software builds released by vendors
(B) Bypassing restrictions to gain root administrative access
(C) Remote locking stolen mobile hardware devices using online cloud services
(D) Formatting removable storage cards and clearing file allocation tables

87. What is the primary purpose of an OTP (One-Time Password) received on a mobile phone?
(A) Expanding total internal storage capacity on mobile electronic devices
(B) Bypassing device lock screen security when user passcodes are forgotten
(C) Connecting automatically to open public Wi-Fi networks without passwords
(D) Providing short-term authentication for login or transactions

88. What does 'Screen Mirroring' or 'Casting' allow a user to do with their mobile phone?
(A) Wireless screen display on external monitors or Smart TVs
(B) Utilizing front-facing camera lenses as digital mirrors for self-viewing
(C) Cloning application software packages to execute multiple instances
(D) Capturing static image screenshots of active screen displays in memory

89. Consider the following statements regarding taking a backup of a mobile phone:
I. A backup can be saved locally on a computer using a USB cable.
II. A backup can be saved to the cloud over a Wi-Fi connection.
III. A backup copies data such as contacts, photos, and app data to prevent loss.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

90. What is 'Dark Mode' on a mobile phone or tablet?
(A) A dark display palette reducing eye strain and saving battery
(B) A hardware setting disabling integrated optical camera flash units completely
(C) A mobile security setting concealing confidential personal software applications
(D) A power-saving state where entire electronic hardware displays turn off

91. In cellular network technology, what does the 'G' in 4G or 5G stand for?
(A) Gigabyte
(B) Gateway
(C) Grid
(D) Generation

92. What does the abbreviation PIN stand for in the context of mobile device security?
(A) Private Internet Network Node Infrastructure
(B) Personal Identification Number
(C) Primary Interface Network Management Node
(D) Protected Information Network System Node

93. What action is required to scan a QR code using a modern smartphone?
(A) Dialing specific diagnostic service codes into mobile phone keypads
(B) Enabling local mobile hotspot connections within network settings

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30. (D) Orientation
Page orientation defines how content is visually arranged on paper, offering two primary layout selections: Portrait and Landscape. Switching from portrait to landscape changes page orientation from vertical to horizontal layout, expanding horizontal printable width across sheets. Settings such as margins or paper size alter document boundaries rather than content layout direction.

31. (A) A network printer connects via router, while a local printer connects to one PC
A local printer connects directly to a single standalone computer using physical interface cabling like USB, making it accessible only to that host computer unless shared manually. Conversely, a network printer connects independently to a network router via Wi-Fi or Ethernet, allowing all authorization devices across the network access.

32. (B) Control Panel → Devices and Printers
In Microsoft Windows environments, the Devices and Printers applet within the Control Panel provides a centralized administrative overview of all installed printing, scanning, and hardware peripherals. Through this interface, users can manage hardware settings, check connectivity statuses, configure default printers, view active print queues, and troubleshoot hardware communication problems.

33. (B) View document layout on screen prior to printing
Print Preview is a pre-printing software utility that displays an exact on-screen visual representation of how a document will look when physically printed. It allows users to verify layout formatting, page margins, line alignment, image placement, and overall page count before committing the document to physical paper, thereby preventing paper waste.

34. (A) Replacing worn printer ribbons when output turns faint
Dot matrix printers use continuous fabric ribbons impregnated with ink to transfer text onto paper through mechanical pin impacts. Over extended operational use, the ink on these ribbons gradually depletes, causing output text to appear faint. Consequently, replacing worn ink ribbons constitutes a routine maintenance procedure for maintaining readable dot-matrix printing quality.

35. (C) II and III only
An offline status indicates that a printer is disconnected or unreachable, preventing it from processing jobs immediately, making statement I false. However, corrupted print drivers frequently cause hardware communication failures, and clearing stuck print queues resolves processing blockages. Thus, statements II and III represent correct statements regarding printer system troubleshooting.

36. (D) The default printer automatically selected unless specified otherwise
The default printer setting designates a specific hardware or virtual printer as the automatic destination for all print commands executed across applications on an operating system. Unless a user manually changes the target printer in the print dialog box during an active print job, output data routes automatically to this designated device.

37. (C) A portable touchscreen computing device
A tablet is a lightweight, highly portable personal computing device featuring a integrated flat touchscreen display as its primary input interface. Combining mobile operating systems with wireless connectivity options, tablets offer modern personal computing, media consumption, and document processing features without relying on physical mechanical keyboards, mice, or desktop chassis enclosures.

38. (B) A touchscreen with a virtual onscreen keyboard
Tablet computers replace traditional physical input hardware, such as mechanical keyboards and desktop mice, with capacitive touch-sensitive screens. Users interact directly with software interfaces through multi-touch finger gestures, taps, and swipe actions on the glass display, while an integrated virtual on-screen keyboard automatically pops up whenever text input entry is required.

39. (D) Google Play Store
The Google Play Store serves as the primary, pre-installed digital distribution application platform for devices running the Android operating system. It provides users with a centralized, secure environment to discover,

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purchase, download, and automatically update verified software applications, digital utility programs, mobile games, and digital media directly onto Android tablets.

40. (A) Connecting to a Wi-Fi or cellular network for initial setup
When initializing a brand-new tablet for first-time operation, connecting to an active Wi-Fi or cellular network is essential. This initial connectivity enables the device operating system to contact activation servers, download critical system updates, authenticate user accounts, complete security registrations, and synchronize essential cloud data necessary for full system functionality.

41. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Modern tablets eliminate the necessity for external mice by incorporating capacitive touchscreens that register electrostatic properties of user fingertips. This touch technology allows users to navigate operating system interfaces directly using taps, pinches, and swipes, directly explaining why traditional external pointer hardware is no longer required for standard tablet navigation.

42. (A) Bluetooth
Bluetooth is a short-range, low-power wireless communication technology designed to establish direct personal area networks between electronic devices. It is universally integrated into tablets, smartphones, and computers, enabling secure, cable-free connections to external peripheral accessories such as wireless headphones, external keyboards, computer mice, and portable speaker devices.

43. (D) It disables all wireless communications on the device
Airplane Mode is a system setting that immediately disables all radio frequency transmissions on mobile devices, including cellular signals, Wi-Fi, Bluetooth, and GPS hardware functions. Designed primarily to prevent interference with aircraft navigation and communication systems, it also serves as a fast method to conserve battery or halt wireless data exchanges.

44. (B) An Apple ID
An Apple ID is a mandatory user account authentication system required to access proprietary digital cloud services and software distribution platforms across Apple hardware devices. Installing applications on an iPad via the official App Store requires an active Apple ID to authenticate downloads, manage subscriptions, verify payment details, and store purchase histories.

45. (C) Optical CD/DVD drive
Standard tablet devices prioritize portability, energy efficiency, and compact thin form factors, leading manufacturers to omit bulky physical components such as optical CD/DVD drives. Modern tablets instead rely entirely on solid-state internal flash memory, high-speed wireless connectivity interfaces, expandable storage slots, and cloud services for data storage and file distribution.

46. (D) Locks screen orientation when tilting the device
The screen rotation lock feature prevents display orientation from automatically switching between portrait and landscape modes when the physical orientation of the tablet is tilted. By locking the screen display to a chosen orientation, it ensures consistent visual orientation during movement, outdoor activity, or reading while reclining.

47. (B) I, II and IV
Tablets support internet access through Wi-Fi networks and cellular data networks when equipped with SIM modules. Additionally, they utilize Bluetooth technology to interface with peripheral hardware like printers and headphones. Because tablets can successfully connect to external devices, statement III is incorrect while statements I, II, and IV are correct.

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48. (B) To clear temporary files and resolve minor app errors
An application cache consists of temporary data files, images, and scripts stored locally in system memory to accelerate app load times. Over time, cached data can become corrupted or consume excessive storage space. Clearing this cache removes temporary files, resolves unexpected application glitches, and reclaims internal storage without removing user data.

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49. (B) A pen-like input device for touchscreen drawing
A stylus is an elongated, pen-shaped input tool engineered specifically for interacting with touchscreen displays on tablets and smartphones. It offers fine pointing precision, pressure sensitivity, and tactile accuracy, enabling users to perform precise digital drawing, graphic design, handwritten note-taking, and detailed interface navigation far more accurately than finger touches allow.

50. (A) Cleaning with a soft microfiber cloth and screen solution
Proper physical maintenance of a tablet screen involves using a soft, non-abrasive microfiber cloth combined with specialized screen cleaning solutions or distilled water. This approach safely removes fingerprints, oils, and surface dust without scratching delicate display glass coatings or damaging underlying capacitive touch sensor layers with harsh abrasive paper or aggressive chemical solvents.

51. (C) Phablet
The term phablet, derived from combining phone and tablet, describes touchscreen mobile devices with screen sizes ranging roughly between 5.5 and 7 inches. Blending mobile cellular calling features with expanded screen space ideal for web browsing and media consumption, phablets bridge the dimensional gap between standard compact smartphones and larger tablets.

52. (D) Android
Android is a widely adopted, open-source mobile operating system based on a modified version of the Linux kernel, developed primarily by Google. Designed primarily for touchscreen mobile hardware such as smartphones and tablets, Android's customizable software platform allows global manufacturers to build diverse consumer devices utilizing shared core application ecosystems.

53. (A) P-2, Q-1, R-4, S-3
Android is developed by Google as an open-source mobile platform, whereas iOS is a proprietary operating system built by Apple Inc. exclusively for its devices. Windows Phone was created and maintained by Microsoft, while HarmonyOS represents a multi-device operating system independently developed by Huawei to power its consumer device ecosystem.

54. (B) Subscriber Identity Module
SIM stands for Subscriber Identity Module. It is a removable smart card containing secure identification credentials, network authentication keys, and user account profiles required to connect mobile phones to cellular telecommunication networks. SIM cards enable cellular service providers to identify subscribers, handle routing, and enable voice calls and cellular data transfers.

55. (D) IMEI Number
The International Mobile Equipment Identity (IMEI) is a unique 15-digit code assigned to every cellular mobile device worldwide. Stored within device hardware, the IMEI number identifies individual mobile hardware units on cellular networks, assisting service providers in tracking devices, blocking stolen phones from accessing networks, and verifying network hardware compatibility.

56. (A) Connecting to cellular networks outside the home coverage area
Data roaming allows a mobile phone to maintain cellular internet connectivity by connecting to partner telecommunication networks when operating outside the primary service coverage area of its home provider. While enabling uninterrupted data services during travel, roaming may incur additional service charges depending on service provider agreements and geographic locations.

57. (C) .apk
The .apk (Android Package Kit) extension denotes the official archive file format used by the Android operating system to distribute and install mobile applications. Containing application code, resource files, assets, and software manifests, APK files enable users to manually install applications directly onto Android devices outside standard distribution platforms.

58. (A) Updating installed apps via Google Play Store settings
Updating applications on an Android mobile device is routinely managed through settings within the Google Play Store. Users can configure automatic update preferences or manually initiate pending application updates. This process ensures applications receive security patches, bug fixes, performance improvements,

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specific hardware modules and user data, such as camera lenses, microphones, GPS location services, contact lists, and local storage. Requiring explicit user approval for these permissions ensures applications operate within authorized limits while safeguarding personal user privacy.

99. (C) Safe Mode
Safe Mode is a diagnostic environment available on mobile operating systems that boots the device with only core system apps and original system drivers loaded. By temporarily disabling all third-party installed software, Safe Mode allows users to identify whether operating system instability or performance issues are caused by malfunctioning third-party applications.

100. (D) Share Location
The Share Location feature utilizes embedded GPS hardware and mobile networking to transmit real-time geographic coordinates to selected contacts via messaging platforms like WhatsApp or Google Maps. This functionality enables recipients to view static or live tracking routes on interactive maps, assisting in navigational coordination and personal safety monitoring.

101. (B) I, III and IV
Essential mobile security practices include installing regular operating system updates, configuring robust lock screen security credentials, and maintaining offsite data backups. Conversely, downloading apps via unverified text message links exposes systems to malware infections, making statement II unsafe while confirming that statements I, III, and IV reflect proper practices.

102. (B) A recorded audio message left by unanswered callers
Voicemail is an automated telecommunication system that records audio messages left by callers when the recipient is unavailable or declines an incoming call. The recorded audio file is stored securely on the network carrier's voicemail server, allowing the device user to access, playback, and manage their received voice messages at a convenient time.

103. (D) USB Type-C connector
USB Type-C is the standardized physical connector used across modern smartphones, laptops, and peripheral electronics. Featuring a reversible 24-pin design that plugs in regardless of orientation, USB Type-C supports high-speed data transfer protocols, elevated electric power delivery for fast battery charging, and multi-protocol video output standards over a unified cable interface.

104. (A) Sharing mobile cellular internet with computers via USB
Tethering refers to connecting a mobile phone to another device, such as a laptop computer, to share its cellular data connection. When performed via physical USB cabling, it provides a stable internet link while simultaneously charging the mobile device, offering a reliable networking alternative to wireless personal hotspot setups.

105. (C) Silencing calls and notifications based on user settings
Do Not Disturb (DND) is a management feature on mobile devices designed to silence incoming call ringers, notification chimes, and visual pop-up alerts. Users can configure DND rules to permit priority contacts or repeated calls through while preventing non-essential notification distractions during meetings, quiet hours, or sleeping periods.

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106. (A) PUK
PUK (Personal Unblocking Key) is a specialized security code used exclusively to unblock a SIM card after multiple incorrect PIN entries, rather than serving as a standard screen lock mechanism. Screen lock options designed to protect device access include graphic Patterns, numeric PINs, dynamic biometric profiles, and alphanumeric Passwords.

107. (A) P-3, Q-4, R-1, S-2
DigiLocker provides secure digital storage for official documents, UMANG delivers a single interface for accessing multi-departmental government services, BHIM uses the Unified Payments Interface to enable instant electronic money transfers, and Aadhaar serves as a unique twelve-digit identity verification number for Indian residents.

108. (B) Securely accessing internal office networks over public internet
A Virtual Private Network (VPN) creates an encrypted communication tunnel over public internet infrastructures. In government and

damage. Proper battery maintenance requires avoiding extreme heat exposure, while using original chargers and stopping charging at full capacity reflect proper care.

69. (C) It provides location and navigation services
The Global Positioning System (GPS) receiver embedded in a mobile phone communicates with orbiting satellite networks to determine the precise geographic location coordinates of the device. This hardware capability powers location-based mapping, real-time turn-by-turn navigation, geofencing, location tracking in emergency situations, and location tagging across mobile software applications.

70. (B) To view and switch between open or recent applications
The Recent Apps interface on a mobile operating system displays visual thumbnails of recently used or active background applications. By tapping this button, users can quickly cycle between open programs, resume background tasks, or swipe applications off the screen to close them, enhancing multitasking efficiency and active system memory control.

71. (B) I, III and IV
SIM cards store subscriber authentication keys and allow dual-SIM devices to run two separate network services simultaneously. Modern smartphones use smaller form factors like Micro-SIM, Nano-SIM, or embedded digital eSIMs rather than full-sized SIMs exclusively, rendering statement II false while validating statements I, III, and IV.

72. (A) Mobile cellular data and voice standards
LTE (Long-Term Evolution) and VoLTE (Voice over LTE) represent wireless communication standards developed for mobile cellular networks. LTE provides high-speed wireless data transmission protocols for 4G networks, while VoLTE enables high-definition digital voice calls over IP-based 4G data networks, enhancing overall call clarity and connection setup speed.

73. (C) Sideloading
Sideloading refers to installing application files manually onto a mobile device from third-party sources or external file managers rather than through official app marketplaces like the Google Play Store. On Android, this process involves opening an executable APK file and granting installation permissions within device security settings.

74. (A) Requiring two verification steps for added security
Two-Factor Authentication (2FA) enhances user account security by requiring two distinct identity verification parameters before granting account access. Typically combining something the user knows, such as a password, with something the user possesses, like an OTP sent to a mobile device, 2FA effectively prevents unauthorized access from stolen credentials.

75. (D) Near Field Communication
NFC stands for Near Field Communication. It is a short-range, low-power wireless connectivity standard operating at short physical distances, typically four centimeters or less. NFC enables quick data exchange between compatible hardware devices, serving as the foundational technology behind contactless mobile payment systems, digital transit ticketing, and instant accessory pairing.

76. (B) App Store
The App Store is Apple's digital application platform for iOS and iPadOS devices. It provides a curated, secure marketplace where Apple users can search, download, and purchase verified mobile software applications. Apple reviews all submissions to the App Store for security compliance, performance stability, and privacy standard adherence.

77. (A) P-3, Q-4, R-1, S-2
Airplane Mode turns off cellular and wireless radios, and Bluetooth enables short-range accessory pairing. A Mobile Hotspot broadcasts local cellular internet connectivity to nearby clients over a wireless network interface, while Wi-Fi connects devices directly to local wireless network routers to establish local internet access.

78. (D) They must be paired
Before two Bluetooth-enabled hardware devices can exchange data securely, they must complete an initial pairing process. During pairing, the devices establish a trusted wireless connection by exchanging passkeys or security identifiers, registering each other in internal system memories to permit automatic, encrypted short-range wireless communication during future connections.

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and new functional features directly from developer repositories.

59. (D) I, II and III
Mobile security mechanisms provide flexible options to safeguard device data. PIN locks rely entirely on numeric digit sequences, pattern locks require connecting a sequence of points on a graphical grid, and biometric authentication uses unique physiological traits like fingerprints or facial structures. Consequently, statements I, II, and III are all correct.

60. (B) .vcf (vCard file)
The .vcf extension identifies Virtual Contact Files (vCards), which serve as the standard file format for storing contact card details, including personal names, telephone numbers, email addresses, and postal locations. This standard format enables seamless contact data export, import, backup, and cross-platform synchronization across different mobile operating systems and email clients.

61. (C) Short Message Service
SMS stands for Short Message Service, a standardized communications protocol used by telecommunication networks to transmit short alphanumeric text messages between mobile devices. Operating across standardized cellular signal channels, SMS enables instant text messaging capabilities across virtually all mobile phone hardware models globally without requiring internet data connectivity.

62. (D) Mobile Hotspot
The Mobile Hotspot feature enables a smartphone to share its cellular internet connection with nearby Wi-Fi devices, such as laptops, tablets, or other phones. By configuring internal Wi-Fi hardware as a local wireless access point, the phone routes data packets between connected devices and the cellular network, enabling internet access.

63. (A) Preventing data loss if the device is damaged or stolen
Backing up a mobile phone to secure cloud repositories ensures that personal data, including contacts, media, photos, and app settings, is securely saved off the physical device. This offsite storage safeguards essential information against hardware failure, physical theft, accidental deletion, or water damage, permitting rapid data restoration onto replacement hardware.

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64. (B) Erasing all user data, personal settings, and downloaded apps
A Factory Data Reset permanently wipes all saved data from a mobile phone's internal memory storage. This action deletes downloaded applications, user accounts, system preferences, personal media, and saved files, returning the operating system software back to its original clean state as originally configured when manufactured at the factory.

65. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Regularly installing operating system updates is critical for mobile security because software developers continually discover and patch security vulnerabilities within system code. These updates deliver vital security patches that protect devices against newly emerging malware threats, exploiting attempts, and unauthorized data access, directly justifying the practice of routine software updating.

66. (A) Using a mobile print plugin or printer manufacturer app
Android devices can print directly to wireless network printers by utilizing integrated print service plugins or manufacturer-specific mobile applications. Once installed, these tools discover compatible printers connected to the same Wi-Fi network, format print jobs into supported spooling data formats, and transmit documents wirelessly without intermediate desktop computer intervention.

67. (C) USB OTG (On-The-Go) Adapter
A USB OTG (On-The-Go) adapter converts a mobile device's Micro-USB or USB-C port into a standard USB female port. This accessory allows smartphones and tablets to act as host hardware, enabling direct physical connection and file transfer with external peripheral devices such as USB flash drives, keyboards, and mice.

68. (D) Exposing devices to extreme heat, such as hot car dashboards
Exposing mobile phones to high ambient temperatures accelerates internal lithium-ion chemical battery degradation, leads to rapid capacity loss, and can trigger dangerous battery swelling or permanent internal component

Wi-Fi protocols like Miracast or Chromecast, it facilitates large-screen presentations, video playback, and collaborative viewing.

89. (D) I, II and III
Mobile device backups can be saved locally to a computer using physical USB connections or uploaded directly to cloud servers using Wi-Fi networks. These backups preserve essential personal data, including contacts, photos, and app information, to prevent total data loss during hardware failure, confirming that statements I, II, and III are correct.

90. (A) A dark display palette reducing eye strain and saving battery
Dark Mode alters the system graphical interface by displaying light-colored text and icons against dark background palettes. This visual configuration reduces glare and blue light emission, lessening eye fatigue during nighttime usage. On devices equipped with OLED or AMOLED screens, displaying dark pixels conserves battery power by switching off individual display subpixels.

91. (D) Generation
In cellular network communications, the letter G stands for Generation. Terms such as 3G, 4G, and 5G represent successive technological generations of mobile telecommunication standards, each introducing improved data transmission speeds, increased network bandwidth capabilities, reduced latency parameters, and support for higher device connectivity density across cellular infrastructures.

92. (B) Personal Identification Number
PIN stands for Personal Identification Number. It is a secret numeric passcode entered by a user to verify identity and gain access to secure systems. In mobile devices, PINs serve as primary or secondary security safeguards to unlock device displays, authorize sensitive account settings, or access restricted subscriber data stored on SIM cards.

93. (C) Scanning the code with a camera or QR reader app
To process a Quick Response (QR) code, a user opens a smartphone camera app or specialized QR code reader application and points the camera lens at the code grid. The optical software analyzes the matrix patterns, decodes the embedded data link or text string, and triggers automated actions such as opening web URLs.

94. (D) Clearing application cache and data, or updating software
When an application repeatedly crashes, clearing its cached temporary files and stored app data clears corrupted temporary files that disrupt software execution. Additionally, updating the application installs software patches that resolve code bugs, making these steps the primary troubleshooting approach prior to executing drastic actions like factory resetting.

95. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Official marketplaces like Google Play and the Apple App Store implement automated security screening mechanisms, such as Google Play Protect, to analyze software code for malicious software, viruses, and policy violations. This rigorous vetting process makes downloading apps from official app platforms vastly safer than downloading unverified application files from third-party websites.

96. (B) Unnecessary pre-installed apps consuming local storage
Bloatware refers to unwanted software applications pre-installed on mobile devices by hardware manufacturers or network carriers. These redundant apps often run background tasks, consume valuable internal storage capacity, drain system battery resources, and cannot always be easily uninstalled by users through standard operating system application settings without administrative permissions.

97. (B) AirPrint
AirPrint is a proprietary wireless printing technology developed by Apple Inc. for iOS, iPadOS, and macOS operating systems. It enables mobile devices like iPhones and iPads to discover and print high-quality documents over local Wi-Fi networks directly to compatible AirPrint-enabled printers without requiring manual driver installations or dedicated printing app configurations.

98. (A) Access rights to hardware or data like camera and contacts
App permissions define access controls granted to individual software applications regarding

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79. (A) App alerts displayed on the home or lock screen
Push notifications are automated messages and real-time alerts sent by backend application servers directly to mobile devices. Appearing on screen banners, lock screens, or notification centers, these alerts inform users about incoming messages, breaking news updates, application status changes, or calendar reminders without requiring the corresponding app to be active.

80. (B) Blocking internet access over cellular networks
Disabling mobile data prevents a smartphone from transmitting or receiving internet data packets over cellular carrier networks like 4G or 5G. This action halts internet-dependent application services when outside Wi-Fi coverage while preserving standard cellular voice call connectivity and traditional SMS capabilities, helping users limit cellular data usage charges.

81. (B) APN (Access Point Name)
Access Point Name (APN) settings configure the network gateway path that connects a mobile device to a carrier's cellular internet infrastructure. The APN parameters define network routing, IP address assignments, security settings, and Multimedia Messaging Service configurations necessary for establishing functional data connections through cellular service providers.

82. (A) Find My Device
Find My Device is a default security application provided by Google for Android operating systems. Linked to a user's Google Account, this tool allows users to remotely track the geographical location of misplaced devices, trigger loud sound alerts, lock screen access, or remotely erase sensitive personal data if theft is suspected.

83. (C) Open Settings → Turn on Wi-Fi → Select Network Name → Enter Password
To connect a mobile device to a Wi-Fi network, the user opens the system Settings menu and enables the Wi-Fi interface. The device scans for available local wireless broadcasts, allowing the user to select the correct network name (SSID). Finally, entering the appropriate network security password authenticates the connection.

84. (D) They are physical size variations of standard SIM cards
Micro-SIM and Nano-SIM represent reduced physical dimensions of traditional subscriber identity module hardware cards. While their surrounding plastic casing is significantly smaller to save internal physical space inside modern slim smartphone designs, their internal integrated circuit architectures and network authentication mechanisms remain identical to standard full-size SIM cards.

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85. (C) MS-DOS is the primary OS for modern smartphones
MS-DOS is a legacy 16-bit text-based desktop computer operating system from the 1980s that completely lacks touchscreen interfaces, mobile hardware driver support, and modern cellular networking capabilities. Contemporary smartphones rely instead on advanced mobile operating systems such as Android or iOS designed specifically for modern touch-driven mobile computing.

86. (B) Bypassing restrictions to gain root administrative access
Jailbreaking on iOS and Rooting on Android refer to processes that bypass manufacturer operating system security restrictions to grant superuser administrative privileges. While this level of control allows deep system customization and installation of unauthorized software, it undermines built-in system security frameworks, voids manufacturer warranties, and increases device vulnerability to malware.

87. (D) Providing short-term authentication for login or transactions
A One-Time Password (OTP) is a automatically generated numeric or alphanumeric string that serves as a single-use authentication credential. Valid for a single login session or transaction within a limited time window, OTPs sent via SMS significantly enhance security by ensuring intercepted passwords cannot be reused by malicious actors.

88. (A) Wireless screen display on external monitors or Smart TVs
Screen Mirroring, also known as casting, enables a mobile device to duplicate its visual screen display and audio output wirelessly onto external displays such as Smart TVs, digital projectors, or monitors. Operating over local

enterprise environments, deploying a VPN on mobile devices permits employees to transmit sensitive data securely and access protected intranet databases or administrative applications remotely without exposing confidential communication parameters to public network interception.

109. (C) Mobile Device Management
Mobile Device Management (MDM) refers to software security suites utilized by IT departments to monitor, manage, and secure mobile hardware used across enterprise or government environments. MDM solutions enforce system security policies, deploy official enterprise applications remotely, mandate device encryption protocols, and allow remote data wiping if devices are misplaced or stolen.

110. (D) Sandes (GIMS)
Sandes, developed under the Government Instant Messaging System (GIMS) initiative by the National Informatics Centre (NIC), is an instant messaging mobile application. Designed to provide secure, encrypted communication infrastructure for Indian government officials and government entities, Sandes ensures data privacy compliance while offering messaging capabilities comparable to commercial chat platforms.

111. (A) IMAP/POP3 and SMTP
Configuring an official National Informatics Centre (NIC) email account on mobile devices requires configuring standard internet message protocols. IMAP (Internet Message Access Protocol) or POP3 (Post Office Protocol 3) handle retrieving incoming email messages from servers, while SMTP (Simple Mail Transfer Protocol) governs transmitting outgoing email messages securely across server networks.

112. (B) .pdf
Portable Document Format (.pdf) is the universally recognized document file standard used for digitizing physical paperwork for official e-Office systems. PDF files preserve original document layouts, typography, embedded optical scans, and formatting across diverse hardware platforms, while supporting security encryption features, electronic signatures, and compact text compression standards suitable for archiving.

113. (A) Open Play Store → Search App Name → Tap Install → Open App
The secure process for installing a new app on an Android device begins by opening the pre-installed Google Play Store. The user searches for the desired application name in the search bar, selects the official app from verified developers, taps Install to download and verify files, and finally opens the application.

114. (A) UMANG
UMANG (Unified Mobile Application for New-age Governance) is a centralized mobile platform developed by the Ministry of Electronics and Information Technology in India. It provides citizens access to a wide range of pan-India e-Government services spanning central, state, and local administrative bodies, including provident fund management, healthcare, and utility payment services.

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115. (C) Using public Wi-Fi networks for official banking is safe
Public Wi-Fi networks often lack essential encryption standards, making them vulnerable to packet sniffing, man-in-the-middle attacks, and data interception by malicious actors. Performing sensitive tasks like official banking over public wireless networks presents major security risks, rendering statement C completely incorrect regarding mobile security best practices.

116. (D) Phone Link app
The Phone Link application, integrated into Microsoft Windows, allows users to pair their mobile devices wirelessly with desktop computers. It enables screen mirroring, allowing users to view and control their mobile device interface directly on desktop monitors, access notifications, transfer files, and manage calls during official presentations and office operations.

117. (C) Grouping similar apps for easy organization and quick access
Creating app folders on a mobile home screen allows users to group related software applications into single, organized container icons. Categorizing applications by functionality—such as productivity, banking, or communication—reduces screen clutter, streamlines navigation, and improves operational efficiency when launching frequently used software tools during daily device use.

118. (B) Adaptive Brightness
Adaptive Brightness utilizes ambient light sensors built into mobile devices to evaluate surrounding illumination levels continuously. The operating system adjusts screen display backlight brightness automatically based on detected light environments, ensuring optimal visual readability in bright sunlight while dimming screen intensity in dark rooms to conserve system battery power.

119. (D) I, II and III
The mAadhaar application allows users to carry digital demographic information on their smartphones, requires SMS OTP verification during setup for security authentication, and includes administrative features to temporarily lock or unlock biometric verification services. Consequently, statements I, II, and III are all correct regarding this government application service.

120. (A) Preventing unauthorized access when left unattended
Setting a short screen lock timeout, such as 30 seconds, automatically locks mobile devices shortly after user inactivity. In administrative and government office settings, this policy prevents unauthorized personnel from accessing sensitive official records, internal emails, or secure databases if a mobile phone or tablet is left unattended on a desk.

121. (C) Opening contextual menus with App Info, Remove, or Uninstall
Performing a long-press action on an application icon on an Android home screen activates a contextual pop-up menu. This shortcut menu presents management options, such as viewing detailed application information, removing the icon shortcut from the home screen, executing app uninstallation, or accessing app-specific quick action commands.

122. (A) NFC integrated with a mobile payment app
Near Field Communication (NFC) technology integrated into smartphones enables securely transmitted contactless payment processing. When paired with mobile payment applications, NFC allows the phone to emulate secure payment cards, transferring encrypted transaction credentials wirelessly to compatible Point-of-Sale (POS) payment terminals when held within close physical proximity.

123. (D) Extracting files with a file manager or unzipping utility
A ZIP file is a compressed data archive containing one or more files reduced in size for efficient transmission. To read the individual documents stored within a ZIP archive on a mobile phone, the user must run an archive extraction utility or built-in file manager to unzip and extract the contents.

124. (B) Browsing without saving local history, cookies, or site data
Incognito Mode or Private Browsing prevents web browsers from storing local session data on the mobile device. During private sessions, the browser automatically discards search histories, browser cookies, form input entries, and temporary site data upon closing, ensuring secondary users of the same device cannot view browsing activities.

125. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Routinely backing up personal contacts, administrative calendar events, and documents to cloud storage ensures data resilience. Storing duplicates in cloud repositories guarantees that critical information can be recovered promptly onto replacement devices if physical hardware is lost, stolen, damaged, or corrupted, directly supporting the recommended backup practice.

126. (D) Accelerometer / Gyroscope
Accelerometers and gyroscopes are motion sensors integrated into modern mobile hardware. Accelerometers detect linear acceleration and gravitational pull vectors, while gyroscopes measure angular velocity and orientation changes. Working together, they detect screen orientation changes when users tilt or rotate devices, triggering automatic display transitions between portrait and landscape layouts.

127. (A) Silent or Vibrate Mode
Configuring a smartphone to Silent or Vibrate Mode mutes audible ringers and alert tones during important meetings. This operational state prevents disruptive noise while allowing users to receive silent haptic vibrations or visual screen pop-up notifications, enabling awareness of incoming emergency communications without disturbing official proceedings.

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128. (B) Resetting the app to default state and clearing saved data
Selecting 'Clear Data' within an application's storage settings permanently deletes all user files, login credentials, database records, and custom configurations associated with that app. This action completely resets the application back to its fresh initial post-installation state, serving as an effective troubleshooting step for resolving persistent software failures.

129. (B) Using the 'Block Number' feature in dialer settings
Smartphone dialer applications include a 'Block Number' setting designed to prevent unwanted telemarketing calls or spam messages. Entering designated numbers into the device blocklist causes the operating system to automatically reject incoming calls and suppress notification alerts from those callers without ringing or interrupting the device user.

130. (A) 2, 3, 1, 4
The hierarchy of storage components in mobile computing devices, ordered from slowest to fastest access speed, begins with external MicroSD cards, followed by internal flash storage, system RAM, and finally CPU Cache memory. CPU Cache operates closest to the processor cores, delivering access speeds exponentially faster than flash memory or external cards.

131. (A) I, II and III
Uninstalling unused applications, offloading photos to cloud platforms, and clearing app caches free up local storage space on mobile devices. Conversely, keeping background apps open consumes system memory resources without increasing local storage capacity, confirming that statements I, II, and III represent valid storage management practices.

132. (D) Lacking large physical keyboards and screens reduces typing efficiency
While modern smartphones support word processing software and document editing applications, their compact physical screen dimensions and touchscreen virtual keyboards present inherent ergonomic constraints. The absence of full-sized physical keyboards and large displays reduces typing speed and editing precision, making mobile devices less efficient for extensive document preparation compared to desktop workstations.

133. (C) A padlock icon next to the URL (HTTPS)
A padlock icon situated alongside a web address starting with HTTPS indicates that the connection to the website is encrypted using Secure Sockets Layer (SSL) or Transport Layer Security (TLS) protocols. This encryption safeguards transmitted sensitive data against unauthorized eavesdropping or interception while communicating with official government portals.

134. (B) A home screen app shortcut displaying live information
A widget is an interactive, miniature application view that resides directly on a smartphone or tablet home screen. Unlike static app icons, widgets display continuously updated live information—such as weather forecasts, calendar events, email previews, or clock displays—allowing users to access real-time information without opening full applications.

135. (D) Holding power buttons for 10-20 seconds to force restarts
When a smartphone experiences a complete system freeze and stops responding to touchscreen inputs, executing a force restart is required. Pressing and holding the physical power button continuously for 10 to 20 seconds interrupts power delivery to the hardware processor, forcing the operating system to reboot and clear memory errors.

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136. (A) Unblocking SIM cards after repeated incorrect PIN entries
A Personal Unblocking Key (PUK) is an 8-digit security code issued by mobile network operators to unlock SIM cards. If a user enters an incorrect SIM PIN three consecutive times, the SIM card locks automatically for protection; entering the correct PUK code resets the security counter and unblocks cellular network access.

137. (A) P-2, Q-1, R-3, S-4
Phishing uses deceptive messages to steal sensitive login credentials, whereas malware encompasses malicious software intended to compromise device operation. Spam describes unsolicited mass messaging, and ransomware refers to malicious code that encrypts device data or locks system access until a financial ransom payment is made to attackers.

margin.
II. A 'First line indent' moves only the first line of a paragraph inward.
III. Line spacing can only be set to exactly 1.0 or 2.0 lines.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

31. What is the default text alignment in MS Word for English language documents?
(A) Right aligned
(B) Center aligned
(C) Justified
(D) Left aligned

32. Which keyboard shortcut aligns the selected text to the right?
(A) Ctrl + L
(B) Ctrl + R
(C) Ctrl + J
(D) Ctrl + E

33. Which of the following is used to create an ordered list of items where sequence is important?
(A) Bullets
(B) Format Painter
(C) Numbering
(D) Sort

34. How can you apply the format copied using Format Painter to multiple locations without re-selecting the tool?
(A) Single click the Format Painter button
(B) Right click the Format Painter button
(C) Hold Shift and click the Format Painter button
(D) Double click the Format Painter button

35. The keyboard shortcut to apply double line spacing to a paragraph is:
(A) Ctrl + 2
(B) Ctrl + 1
(C) Ctrl + 5
(D) Ctrl + D

36. Arrange the following steps in the correct order to apply a numbered list to existing text in MS Word.
1. Click on the 'Numbering' command in the Paragraph group.
2. Select the text you want to format as a list.
3. Choose the desired numbering style from the drop-down menu.
4. Go to the Home tab on the Ribbon.
Select the correct sequence:
(A) 4, 2, 1, 3
(B) 2, 4, 1, 3
(C) 1, 2, 4, 3
(D) 2, 1, 4, 3

37. Which command removes all bold, italic, underline, color, and size formatting from the selected text, returning it to default?
(A) Format Painter Command
(B) Delete Existing Styles
(C) Reset Font Formatting
(D) Clear All Formatting

38. The maximum font size that can be manually typed in the Font Size box in MS Word is:
(A) 72
(B) 1638
(C) 1024
(D) 2048

39. What is the shortcut key to increase the font size of selected text by 1 point?
(A) Ctrl + [
(B) Ctrl + =
(C) Ctrl +]
(D) Ctrl + +

40. Consider the following statements about saving and opening files in MS Word:
I. A document saved with a password cannot be opened without the password.
II. The shortcut Ctrl + W closes the current document.
III. F12 is the keyboard shortcut for the Save As dialog box.
IV. MS Word cannot open text files (.txt).
Which of the above statements is/are correct?
(A) I, II and IV only
(B) I, II and III only
(C) II, III and IV only
(D) I, III and IV only

41. Which of the following is a valid page orientation in MS Word?
(A) Vertical
(B) Horizontal
(C) Diagonal
(D) Landscape

42. By default, what is the page orientation of a new blank document in MS Word?
(A) Landscape

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CHAPTER 10
Ms Word and Word Processing

1. Which of the following best describes Microsoft Word?
(A) Operating System Software
(B) Word Processing Software
(C) Spreadsheet Management Software
(D) Database Management System

2. The topmost bar on the MS Word screen that displays the name of the currently open document is called the:
(A) Title Bar
(B) Status Bar
(C) Menu Bar
(D) Taskbar

3. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The "Save As" command is used when a user wants to save an existing document with a new name or in a different location.
Reason (R): The "Save" command overwrites the existing file, whereas "Save As" creates a new copy of the file while leaving the original unchanged.
Select the correct answer using the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

4. What is the standard file extension for a document created in MS Word 2007 and later versions?
(A) .doc
(B) .txt
(C) .rtf
(D) .docx

5. The wide band at the top of the MS Word window that contains tabs, groups, and commands is known as the:
(A) Scroll Bar
(B) Ruler
(C) Ribbon
(D) Navigation Pane

6. Consider the following statements regarding the structure of the MS Word screen:
I. The Status Bar is located at the bottom of the document window and displays information such as page count and word count.
II. The Ribbon can be collapsed or minimized to increase the document viewing area.
III. The Title Bar contains the Zoom slider to magnify the document text.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

7. Which keyboard shortcut is used to open an existing document in MS Word?
(A) Ctrl + N
(B) Ctrl + S
(C) Ctrl + W
(D) Ctrl + O

8. Identify the odd one out among the following software.
(A) MS Excel
(B) MS Word
(C) Google Docs
(D) LibreOffice Writer

9. Where is the Zoom slider located in the MS Word interface?
(A) On the Title Bar
(B) On the Menu Bar
(C) On the Status Bar
(D) On the Quick Access Toolbar

10. Match the screen elements of MS Word in List I with their functions/locations in List II.
List I: Screen Elements
P. Quick Access Toolbar
Q. Ruler
R. Status Bar
S. Ribbon

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(A) A3
(B) Legal
(C) A4
(D) Envelope 10

53. What is the keyboard shortcut to open the Print dialog box or Print preview pane?
(A) Alt + P
(B) Shift + P
(C) Ctrl + Shift + P
(D) Ctrl + P

54. Which view allows you to see exactly how your document will look when printed on paper?
(A) Print Layout
(B) Web Layout View
(C) Outline Document View
(D) Draft Document View

55. In the printing options, what does the 'Collate' setting do when printing multiple copies of a multi-page document?
(A) It forces the printer to output the entire document using black and white ink only.
(B) It prints pages sequentially (1, 2, 3...) as complete sets.
(C) It prints all copies of page 1 first, followed by all copies of page 2, and so on.
(D) It automatically scales and shrinks document content to match selected paper sizes.

56. If you want to print only pages 2, 4, 5, 6, and 8 of a document, how should you type this in the Pages field of the Print menu?
(A) 2-4-5-6-8
(B) 2; 4; 5; 6; 8
(C) 2, 4, 5-6, 8
(D) 2, 4, 5, 6-8

57. Which type of break allows you to start a new section on the same page, allowing different formatting (like columns) on the same page?
(A) Page Break
(B) Column Break
(C) Next Page Type Section Break
(D) Continuous Section Break

58. Consider the following statements about Page Setup in MS Word:
I. A document can contain both portrait and landscape pages if section breaks are used.
II. Margins can be set to 'Narrow', 'Moderate', or 'Wide' using built-in options.
III. The page size cannot be customised beyond the standard sizes provided in the menu.
IV. Line numbers can be added to the margin of the document.
Which of the above statements is/are correct?
(A) I, II and IV only
(B) I, II and III only
(C) II, III and IV only
(D) I, III and IV only

59. Under which tab is the 'Page Setup' group (containing Margins, Orientation, Size) typically located in MS Word?
(A) Home Tab
(B) Insert Tab
(C) Layout Tab
(D) Review Tab

60. What is the primary difference between standard 'Save' and 'Export to PDF'?
(A) Save overwrites the active document file, whereas Export automatically deletes the original document from storage.
(B) Exporting to PDF compresses all document graphics and text to reduce the file size down to 0 bytes.
(C) There is no functional difference between the two; both commands perform the exact same action in Word.
(D) Export to PDF creates a non-editable file, while Save retains document editability.

61. What is the minimum number of rows and columns a table in MS Word can have?
(A) 1 row and 1 column
(B) 0 row and 0 column
(C) 2 rows and 2 columns
(D) 1 row and 2 columns

62. Which key is pressed to move the cursor to the next adjacent cell in a table row?
(A) Enter
(B) Tab
(C) Shift
(D) Alt

63. The process of combining two or more selected cells into a single cell in an MS Word table is called:
(A) Splitting cells
(B) Joining cells
(C) Merging cells
(D) Grouping cells

64. Match the MS Word Table operations in List I with their functions in List II.
List I: Table Operations

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selected text.
IV. The default font size in modern versions of MS Word cannot be changed by the user.
Which of the above statements is/are correct?
(A) I, II and IV only
(B) II, III and IV only
(C) I, II and III only
(D) I, III and IV only

21. Which keyboard shortcut is used to make selected text bold?
(A) Ctrl + B
(B) Alt + B
(C) Shift + B
(D) Ctrl + Shift + B

22. Which of the following is not an option available in the 'Change Case' dropdown menu in MS Word?
(A) Sentence case
(B) UPPERCASE
(C) Capitalize Each Word
(D) Title Case

23. What is the effect of selecting text and applying 'Subscript'?
(A) The text appears slightly below the normal line of text.
(B) The text is drawn with a horizontal line through its middle.
(C) The text appears slightly above the normal line of text.
(D) The text becomes highlighted with a specified background color.

24. Match the keyboard shortcuts in List I with their formatting functions in List II.
List I: Keyboard Shortcuts
P. Ctrl + I
Q. Ctrl + U
R. Ctrl + E
S. Ctrl + L
List II: Formatting Functions
1. Left alignment
2. Underline
3. Italic
4. Center alignment
Choose the correct code:
(A) P-2, Q-3, R-1, S-4
(B) P-3, Q-4, R-2, S-1
(C) P-3, Q-2, R-4, S-1
(D) P-4, Q-2, R-3, S-1

25. The vertical space between lines of text in a paragraph is known as:
(A) Line spacing
(B) Word spacing
(C) Indentation
(D) Margin

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26. Which alignment option aligns text evenly along both the left and the right margins?
(A) Align Left
(B) Center
(C) Align Right
(D) Justify

27. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Gutter margin is added to a document's layout to ensure that text is not hidden when the document is bound.
Reason (R): Gutter margin provides extra space to the top or inside margin of a document intended for binding.
Select the correct answer using the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

28. Which tool is used to quickly copy formatting from one piece of text and apply it to another?
(A) Copy Paste Tool
(B) Style Copier Tool
(C) Format Painter
(D) Clone Formatting

29. What is 'Drop Cap' in MS Word?
(A) A large capital letter at paragraph start spanning multiple lines.
(B) A text editing feature that automatically converts all capital letters to lowercase format.
(C) A special graphic shadow and reflection effect applied directly to a capital letter.
(D) A formatting rule that automatically capitalizes the first letter of every new sentence.

30. Consider the following statements regarding paragraph formatting:
I. Indentation determines the distance of the paragraph from either the left or the right

List II: Functions / Locations
1. Used to set margins and tab stops
2. Displays tabs containing command buttons
3. Contains frequently used commands like Save and Undo
4. Shows current page number and word count

Choose the correct code:
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-1, R-4, S-3

11. What is the default name given to a newly created blank document in MS Word until it is saved?
(A) Blank1
(B) Untitled1
(C) Word1
(D) Document1

12. Which of the following statements about saving a document in MS Word is incorrect?
(A) You can save a Word document in PDF format.
(B) Once a file is saved, its name cannot be changed using the Save As option.
(C) The shortcut key to save a document is Ctrl + S.
(D) Documents can be saved automatically at set intervals using the AutoRecover feature.

13. Which command is used to remove the selected text from its original position so it can be pasted elsewhere?
(A) Copy
(B) Delete
(C) Cut
(D) Clear

14. Which of the following is the correct sequence of steps to export an MS Word document as a PDF file?
(A) Go to View Tab → Select PDF → Click Export → Save
(B) Go to Insert Tab → Attach File → Select PDF → Save
(C) Go to Review Tab → Convert → Select PDF → Click Save
(D) Go to File Menu → Save As → Choose Location → Select PDF in 'Save as type' → Click Save

15. When you copy text in MS Word, where is it temporarily stored before you paste it?
(A) Clipboard
(B) Hard Drive
(C) RAM Desktop
(D) Recycle Bin

16. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): Applying 'Justify' alignment to a paragraph distributes the text evenly between the left and right margins.
Reason (R): Justify alignment achieves this by automatically adjusting the spacing between words in the text.
Select the correct answer using the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

17. In MS Word, what is a 'Template'?
(A) A background software program designed to track and monitor user keystrokes
(B) A pre-designed document used as a starting point for a new document
(C) A specific font formatting style applied automatically to section headings
(D) An invisible structural formatting mark used to represent spacing characters

18. What does the keyboard shortcut Ctrl + V do in MS Word?
(A) Pastes content from the clipboard
(B) Views document in full-screen reading mode
(C) Validates document spelling and grammar
(D) Cuts selected text to the system clipboard

19. Font sizes in MS Word are primarily measured in which unit?
(A) Pixels
(B) Inches
(C) Points
(D) Centimetres

20. Consider the following statements regarding formatting in MS Word:
I. Bold, Italic, and Underline are examples of font styles.
II. The Font dialog box can be opened using the shortcut Ctrl + D.
III. Strikethrough is a feature that draws a line horizontally through the middle of the

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(B) Portrait
(C) Square
(D) Web Layout

43. The keyboard shortcut to insert a manual Page Break is:
(A) Shift + Enter
(B) Alt + Enter
(C) Ctrl + Enter
(D) Space + Enter

44. The blank space around the edges of a printed page is known as the:
(A) Indent
(B) Gutter
(C) Padding
(D) Margin

45. Match the Page Setup options in List I with their descriptions in List II.
List I: Page Setup Options
P. Margins
Q. Orientation
R. Size
S. Columns
List II: Descriptions
1. Divides text into two or more vertical sections
2. Selects portrait or landscape layout
3. Sets the blank space around the text
4. Chooses the paper dimensions (e.g., A4, Letter)
Choose the correct code:
(A) P-3, Q-2, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

46. What is the purpose of the 'Gutter' margin in page setup?
(A) To add dedicated side margin space for writing handwritten user notes
(B) To add extra margin space for document binding
(C) To create reserved top and bottom margin space for headers and footers
(D) To automatically increase the overall layout size of the document page

47. Text or graphics printed at the very top margin of every page in a document is called a:
(A) Footer
(B) Watermark
(C) Footnote
(D) Header

48. Where can you insert page numbers in an MS Word document?
(A) In headers, footers, or page margins
(B) Exclusively inside the top page header region
(C) Exclusively inside the bottom page footer region
(D) Exclusively along the side margins of the page

49. A faded text or image that appears behind the main text of a document (e.g., "CONFIDENTIAL") is called a:
(A) Background
(B) Footer
(C) Watermark
(D) SmartArt

50. Consider the following statements about Headers and Footers:
I. You can have a different header for the first page of a document.
II. Headers and footers can only contain text, not images or tables.
III. Page numbers are typically inserted inside headers or footers.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

51. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Mail Merge feature is highly useful for creating personalized mass mailings, such as interview call letters.
Reason (R): Mail Merge combines a single main document with a data source containing multiple recipient details to produce individualised documents.
Select the correct answer using the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

52. Which of the following is a standard paper size commonly used as default in India for printing official documents?

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138. (A) TalkBack / VoiceOver
TalkBack on Android devices and VoiceOver on iOS hardware are integrated accessibility screen readers engineered for visually impaired users. These accessibility features convert on-screen text, interface options, icons, and menu selections into spoken auditory feedback, enabling users to navigate mobile operating systems and software applications without needing sight.

139. (D) The network SSID and correct security password
Connecting a tablet or mobile device to a secure Wi-Fi network requires identifying the specific network name, known as the Service Set Identifier (SSID), and entering the correct network security passphrase. Validating these credentials authenticates the device with the local wireless router, granting secure access to network resources.

140. (B) Enabling Battery Saver mode and lowering screen brightness
Enabling Battery Saver mode extends operating time on a low battery by limiting background application refresh cycles, throttling CPU processing speeds, and reducing push notification frequencies. Combined with manually dimming screen backlight brightness, these measures lower hardware power consumption and maximize remaining device battery life during low power situations.

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P. Merge Cells
Q. Split Cells
R. AutoFit to Contents
S. Insert Above

List II: Functions

1. Adjusts column width automatically based on the text
2. Adds a new row directly above the currently selected row
3. Divides a single cell into multiple new rows and columns
4. Combines multiple selected cells into one larger cell

Choose the correct code:
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-1, Q-2, R-4, S-3
(D) P-4, Q-3, R-1, S-2

65. What does the 'Split Cells' option do in a Word table?
(A) Permanently deletes all selected cells along with their contained content from the table
(B) Separates an existing table into two completely independent and different tables
(C) Divides a single cell into multiple cells
(D) Removes all visible outer and inner structural grid borders of the selected cell

66. To add a photograph saved on your computer into an MS Word document, you would use which option under the Insert tab?
(A) Shapes
(B) Pictures
(C) SmartArt
(D) Screenshot

67. Which feature determines how regular text flows around an inserted picture or object?
(A) Paragraph Text Alignment
(B) Line and Paragraph Spacing
(C) Object Graphic Formatting
(D) Text Wrapping

68. Which feature in MS Word is used to insert decorative text with special effects like shadows, outlines, or reflections?
(A) WordArt
(B) Drop Cap
(C) SmartArt
(D) Text Box

69. What is a primary advantage of using a 'Text Box' in a document?
(A) It permanently prevents all contained text from being analyzed by the automated spell-checker tool.
(B) It automatically translates all entered text into a selected secondary foreign language.
(C) It allows positioning text anywhere on a page independently of normal body text.
(D) It significantly compresses the total file storage size of the document text.

70. Consider the following statements about Tables in MS Word:
I. You can convert a table to plain text.
II. You can sort data alphabetically inside a table column.
III. It is impossible to apply a formula (like SUM) inside a Word table.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

71. What is the keyboard shortcut to insert a Hyperlink in MS Word?
(A) Ctrl + H
(B) Ctrl + L
(C) Ctrl + Y
(D) Ctrl + K

72. What is the function of a Hyperlink in an MS Word document?
(A) It automatically applies high-contrast color formatting and font styles to body text.
(B) It links text or graphics to a webpage, email, or document location.
(C) It automatically creates a real-time background backup copy of the open document file.
(D) It completely locks the selected document text to prevent any future editing actions.

73. How can you easily remove a hyperlink from text without deleting the text itself?
(A) Select the linked text and press the Delete key on your keyboard
(B) Highlight the text and manually change the font color back to standard black
(C) Right-click link and choose 'Remove Hyperlink'
(D) Double-click directly on the hyperlinked text element

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74. Which tool is used to remove unwanted outer parts of an image inserted in MS Word?
(A) Cut
(B) Shrink
(C) Resize
(D) Crop

75. When resizing a picture in MS Word, what does 'Lock aspect ratio' ensure?
(A) Width and height proportions are maintained to prevent distortion.
(B) The picture's original color palette and brightness levels remain completely unchanged.
(C) The picture object gets permanently locked so that it cannot be deleted by mistake.
(D) The picture position remains strictly fixed at a specific anchor location on the page.

76. Which of the following is the correct sequence of steps to initiate a Mail Merge process in MS Word?
(A) Insert Tab → Quick Parts → Mail Merge → Choose Type
(B) Mailings Tab → Start Mail Merge → Choose Document Type
(C) Review Tab → Share → Mail Merge → Choose Type
(D) Layout Tab → Mail Setup → Start Mail Merge → Choose Type

77. Which feature is used to visually communicate information through diagrams such as flowcharts, hierarchies, or process cycles?
(A) Charts Tool
(B) WordArt Tool
(C) SmartArt
(D) Shapes Tool

78. Where can you find the option to insert a basic geometrical figure like a triangle or arrow in MS Word?
(A) Insert > Icons
(B) Insert > SmartArt
(C) Design > Effects
(D) Insert > Shapes

79. The 'Screenshot' option in the Insert tab is used to:
(A) Insert an image of any open program window on your desktop.
(B) Wirelessly capture and insert the active screen of a connected mobile phone device.
(C) Take a high-resolution photograph directly using the computer's built-in webcam.
(D) Convert and print the entire multi-page document into a single graphic file image.

80. Consider the following statements regarding insertion objects in MS Word:
I. A Header is inserted at the top of the page, while a Footer is at the bottom.
II. A Table of Contents can be generated automatically if standard Heading styles are used.
III. You cannot insert a mathematical equation into an MS Word document.
IV. Page numbers can be formatted as Roman numerals (i, ii, iii).
Which of the above statements is/are correct?
(A) I, II and IV only
(B) I, III and IV only
(C) II, III and IV only
(D) I, II and III only

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81. Which function key is used to activate the Spelling and Grammar check dialog box?
(A) F7
(B) F5
(C) F12
(D) F2

82. In MS Word, a red wavy line underneath a word indicates:
(A) A grammatical error
(B) A formatting inconsistency
(C) A hyperlink
(D) A spelling error

83. A blue or green wavy line underneath text in MS Word typically suggests:
(A) A spelling mistake
(B) A grammatical or contextual error
(C) The word has been added to the dictionary
(D) The word is a foreign language word

84. Which tool provides synonyms and antonyms for a selected word in MS Word?
(A) Spell Checker
(B) Dictionary
(C) Thesaurus
(D) AutoCorrect

85. Match the proofing and review indicators/ shortcuts in List I with their meanings in List II.
List I: Indicators / Shortcuts
P. Red Wavy Line
Q. Blue Wavy Line
R. F7 key

S. Shift + F7

List II: Meanings

1. Opens the Thesaurus pane
2. Runs Spelling and Grammar check
3. Indicates a contextual grammar error
4. Indicates a spelling mistake

Choose the correct code:

(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-1, S-2
(C) P-2, Q-3, R-4, S-1
(D) P-4, Q-3, R-2, S-1

86. What is the keyboard shortcut for the Find and Replace dialog box?
(A) Ctrl + H
(B) Ctrl + F
(C) Ctrl + R
(D) Ctrl + G

87. The 'Go To' command (shortcut Ctrl + G) allows a user to quickly jump to a specific:
(A) Unsaved document file in memory
(B) Active printer configuration setting
(C) Page, line, or bookmark
(D) External website URL link

88. What is the primary purpose of the Mail Merge feature in MS Word?
(A) To generate personalized documents for multiple recipients.
(B) To merge and combine multiple existing PDF files into a single master document.
(C) To automatically combine two distinct Word documents into one single file.
(D) To dynamically link and integrate an external Excel chart into a Word report.

89. The Mail Merge process essentially requires two components. They are the Main Document and the:
(A) Formatting Template
(B) Master File
(C) Data Source
(D) Output PDF

90. Consider the following statements regarding Mail Merge:
I. The Data Source can be an Excel spreadsheet or an Access database.
II. Merge Fields are inserted into the main document to indicate where personal data will appear.
III. The final merged document cannot be printed directly; it must be saved as a PDF first.

Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

91. Which of the following file types is commonly used as a data source for Mail Merge?
(A) .jpeg file
(B) .xlsx file
(C) .mp3 file
(D) .exe file

92. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The 'Track Changes' feature is widely used when multiple people are reviewing and editing a single document.
Reason (R): Track Changes visually highlights all additions, deletions, and formatting changes made to the document, allowing the original author to accept or reject them later.
Select the correct answer using the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

93. What is the keyboard shortcut to toggle the Track Changes feature on and off?
(A) Ctrl + T
(B) Alt + T
(C) Ctrl + Shift + E
(D) Ctrl + Alt + C

94. Which feature allows a reviewer to leave a note or suggestion on a specific piece of text without altering the text itself?
(A) Bookmark
(B) Cross-reference
(C) Footnote
(D) Comment

95. The 'Word Count' feature in MS Word can provide statistics on all of the following EXCEPT:
(A) Number of Grammatical Errors
(B) Number of Pages
(C) Number of Characters (with spaces)
(D) Number of Paragraphs

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being Portrait. Landscape orientation rotates the document layout horizontally, making the page wider than it is tall. This orientation is ideal for wide tables, spreadsheets, architectural diagrams, multi-column brochures, and broad visual content layouts.

42. (B) Portrait
When a new blank document is opened in Microsoft Word, its default page orientation is set to Portrait. In Portrait orientation, the document page is arranged vertically, meaning its height is greater than its width. This orientation matches standard print paper formats used for business letters, reports, essays, and general text documentation.

43. (C) Ctrl + Enter
Pressing Ctrl + Enter inserts a manual Page Break at the current insertion point location in Microsoft Word. This command forces any following text or graphics onto the top of the next page regardless of remaining vertical space on the current page, ensuring clean section divisions without pressing the Enter key repeatedly.

44. (D) Margin
A margin is the blank space surrounding the main content area along the top, bottom, left, and right edges of a printed page. Margins define text boundaries, ensure document neatness, provide room for binding or header details, and prevent printed content from running off the edge of physical paper sheets during printing operations.

45. (A) P-3, Q-2, R-4, S-1
Margins define surrounding blank page space. Orientation determines landscape or portrait layout orientation. Size specifies paper physical dimensions such as A4 or Letter formats. Columns split body text into parallel vertical sections across pages. Matching each Page Setup term to its accurate operational definition establishes the correct option combination seamlessly.

46. (B) To add extra margin space for document binding
A gutter margin allocates additional space to the side or top margin of a printed document that is intended to be bound, such as in books, reports, or booklets. This extra space prevents text and graphic content near the inner spine from being hidden or trapped within the physical binding fold of the document.

47. (D) Header
A header consists of text, numbers, or graphics placed within the top margin area of a document page. Once configured, header content automatically repeats across top margins of subsequent pages or section pages, providing consistent display of document titles, author names, chapter headings, running titles, or corporate logos throughout multi-page files.

48. (A) In headers, footers, or page margins
Microsoft Word offers versatile page numbering placements, allowing users to insert automatic page numbers within top headers, bottom footers, or side page margins. Additionally, page numbers can be aligned to left, center, or right positions, or styled using decorative formats to match the layout and design requirements of formal document projects.

49. (C) Watermark
A watermark is a faded background image, text string, or logo placed behind primary document text. It is frequently used in business and legal documents to communicate status, security classifications, or ownership, displaying prominent notices such as "CONFIDENTIAL," "DRAFT," or "SAMPLE" across pages without obstructing readability of overlaying body text.

50. (C) I and III only
Microsoft Word enables setting a unique header for the first page via the 'Different First Page' setting, and page numbers are commonly placed in headers or footers. However, headers and footers can include images, icons, and tables alongside text, making statement II false and confirming that statements I and III are correct.

51. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Mail Merge simplifies producing personalized mass documents like call letters or form notices. It achieves this efficiency by linking a main document containing standardized body text with a structured data source containing recipient details, automatically generating customized individual outputs. Thus, the reason accurately explains the mechanical operations supporting the assertion statement.

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(A) Ctrl + Home
(B) Home
(C) Page Up
(D) Shift + Home

110. Which keyboard shortcut moves the insertion point (cursor) to the very end of the document?
(A) End
(B) Ctrl + End
(C) Alt + End
(D) Shift + End

111. The full form of PDF, a format you can save a Word document as, is:
(A) Printed Desktop Document Format
(B) Public Digital Storage File
(C) Portable Document Format
(D) Primary Data Processing Format

112. RTF is a common file format that can be read by most word processors. What does RTF stand for?
(A) Ready Text File
(B) Real Time Font
(C) Readable Text Format
(D) Rich Text Format

113. MS Word is often described as a WYSIWYG editor. What does WYSIWYG stand for?
(A) What You See Is What You Get
(B) What You Save Is What You Get
(C) When You Start Is When You Go
(D) Window Yields Standard Integrated Word Graphics

114. The Office Clipboard can hold up to how many copied items at one time?
(A) 1
(B) 24
(C) 12
(D) 36

115. What is the function of the shortcut key combination Ctrl + Shift + C?
(A) It copies the selected text as a standalone graphic image.
(B) It aligns and centers the active paragraph text on page.
(C) It copies formatting from selected text.
(D) It automatically inserts a copyright symbol into text.

116. Which of the following shortcuts applies the formatting copied by Ctrl + Shift + C?
(A) Ctrl + V
(B) Alt + V
(C) Shift + Insert
(D) Ctrl + Shift + V

117. What is the function of the F12 key in MS Word?
(A) Opens the Save As dialog box
(B) Opens the Open dialog box
(C) Opens the Print dialog box
(D) Closes the active window

118. Which keyboard shortcut inserts a soft line break (starts a new line without starting a new paragraph)?
(A) Enter
(B) Shift + Enter
(C) Ctrl + Enter
(D) Alt + Enter

119. Which feature of MS Word would be most appropriate for creating a standard office letterhead that appears automatically on every new page of a multi-page letter?
(A) Mail Merge Wizard
(B) Document Watermark
(C) Header and Footer
(D) Page Border Option

120. Which feature of MS Word would be most appropriate for sending an identical circular to 500 different recipients, with only the recipient's name and address changing on each letter?
(A) Format Painter
(B) Copy and Paste
(C) AutoCorrect
(D) Mail Merge

121. In MS Word, what is the best way to secure a confidential document so that unauthorized persons cannot open it?
(A) Encrypt document with password via Protect Document settings.
(B) Hide all document text manually by changing the font color to matching white.
(C) Save the entire document in read-only mode to prevent external editing.
(D) Rename the file extension from .docx to .txt in the file explorer.

122. Which document view maximizes the reading space by hiding most toolbars and the ribbon, making it ideal for reading documents on a screen?
(A) Print Layout
(B) Read Mode
(C) Outline View

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ANSWERS

1. (B) Word Processing Software
Microsoft Word is a widely used word processing application developed by Microsoft. It enables users to create, edit, format, print, and save text-based documents such as reports, letters, and essays. The software provides comprehensive tools for typography, layout design, document review, and file management, making it an essential tool for professional and personal documentation needs.

2. (A) Title Bar
The title bar is located at the top of the application window in Microsoft Word. It displays the file name of the currently active document alongside the application title. Additionally, it contains standard system window controls such as minimize, maximize, restore, and close buttons, as well as access to the quick access toolbar for rapid command execution.

3. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
The Save As command allows users to store a document under a new file name, file format, or folder location without altering the original file. Conversely, the Save command updates and overwrites the active file with recent edits. Therefore, the reason accurately explains why the Save As function is specifically required for creating modified independent document copies.

4. (D) .docx
Starting with Microsoft Office 2007, Microsoft Word adopted the Office Open XML file format, which uses the default file extension .docx. This XML-based format offers improved file compression, enhanced data security, better recovery of damaged files, and broader interoperability across modern software platforms compared to the legacy binary format represented by the older .doc extension.

5. (C) Ribbon
The Ribbon is a prominent graphical element positioned horizontally across the top of the Microsoft Word application window. It organizes features and tools into logical tabs, such as Home, Insert, and Layout, which are further divided into groups of related commands. This user interface design provides streamlined, intuitive access to editing, formatting, and structural document management options.

6. (A) I and II only
The status bar located at the bottom of the window displays document metrics including page numbers and word count. Users can minimize the ribbon to increase the visible editing canvas. However, the zoom slider is situated on the status bar rather than the title bar, rendering the third statement incorrect while the first two statements are completely accurate.

7. (D) Ctrl + O
Pressing Ctrl + O triggers the Open command in Microsoft Word, allowing users to browse system storage or connected cloud drives to locate and open pre-existing documents. In contrast, Ctrl + N creates a blank document, Ctrl + S saves changes to the current file, and Ctrl + W closes the currently active document window in the application.

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8. (A) MS Excel
Microsoft Word, Google Docs, and LibreOffice Writer are all word processing software applications designed specifically for composing, editing, formatting, and reviewing text documents. Microsoft Excel is an administrative spreadsheet application designed for numerical calculations, data manipulation, tabular organization, and graphical charting, making it distinct from the word processing applications listed alongside it in the group.

9. (C) On the Status Bar
The zoom slider is situated on the right side of the status bar at the bottom of the Microsoft Word application window. It enables users to adjust the visual magnification level of the active document display smoothly. Users can zoom in or out without altering the actual font sizes or layout properties of the formatted document text.

136. Which tab is primarily used to change the overall look of a document by applying Document Formatting themes and style sets?
(A) Home Tab
(B) View Tab
(C) References Tab
(D) Design Tab

137. Which of the following is NOT an option when adding a Page Border?
(A) Watermark
(B) Box Border
(C) Shadow Effect
(D) 3-D Border Style

138. Which shortcut key is used to change the text case (toggle between lowercase, uppercase, and capitalization)?
(A) Ctrl + F3
(B) Shift + F3
(C) Alt + F3
(D) Shift + C

139. In a standard office environment, saving a completed official order in PDF format is preferred over Word format because:
(A) PDF format requires significantly more disk storage space than Word documents.
(B) PDF format allows for faster and unrestricted text editing by any recipient.
(C) PDF preserves formatting intact and prevents easy modification.
(D) PDF format automatically checks and corrects remaining spelling errors on opening.

140. Which command lets you view two different parts of the same long document simultaneously by dividing the screen?
(A) New Window
(B) Arrange All
(C) Switch Windows
(D) Split

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96. Which feature automatically fixes common typing and spelling errors as you type (e.g., changing 'teh' to 'the')?
(A) AutoFormat Option
(B) AutoCorrect
(C) AutoText Option
(D) Smart Tags Option

97. In the Find and Replace dialog box, checking the "Find whole words only" option ensures that searching for "cat" will NOT find which word?
(A) cat
(B) cat.
(C) cattle
(D) CAT

98. What is the function of a 'Macro' in MS Word?
(A) To significantly magnify document text and interface elements for visually impaired users.
(B) To compress and optimize the overall file storage size of the active document.
(C) To execute an automated virus scan on the document prior to saving to disk.
(D) To record a series of commands to automate repetitive tasks.

99. The detailed statistics of a document, including author name, file size, and creation date, can be viewed under:
(A) File > Info
(B) View > Details
(C) Insert > Properties
(D) Review > Statistics

100. Consider the following statements about features found on the Review tab:
I. The 'Translate' feature allows you to translate text into a different language.
II. 'Accept' and 'Reject' commands are used to manage tracked changes.
III. The 'Restrict Editing' feature can prevent other users from making changes to the document.
IV. 'Word Count' only counts words and cannot count the number of lines.
Which of the above statements is/are correct?
(A) I, II and IV only
(B) I, II and III only
(C) II, III and IV only
(D) I, III and IV only

101. Which keyboard shortcut is used to reverse your last action (Undo)?
(A) Ctrl + U
(B) Ctrl + Y
(C) Ctrl + R
(D) Ctrl + Z

102. Which keyboard shortcut is used to re-apply an action that was just reversed (Redo)?
(A) Ctrl + Z
(B) Ctrl + Y
(C) Ctrl + Shift + Z
(D) Ctrl + X

103. To quickly select the entire text of a document, which shortcut key combination is used?
(A) Ctrl + E
(B) Shift + A
(C) Ctrl + A
(D) Alt + A

104. What is the shortcut key to cut selected text?
(A) Ctrl + C
(B) Ctrl + V
(C) Ctrl + Z
(D) Ctrl + X

105. What does the shortcut key Ctrl + C do?
(A) Copies selected text
(B) Closes the active document
(C) Centers the paragraph text
(D) Cuts the selected text segment

106. In MS Word, what does pressing 'Ctrl + Right Arrow' do?
(A) Moves the cursor to the end of the line
(B) Moves the cursor one word to the right
(C) Moves the cursor one paragraph down
(D) Selects the next letter

107. Rapidly double-clicking the left mouse button while pointing at a word will result in:
(A) Selecting the entire paragraph
(B) Deleting the word
(C) Selecting that single word
(D) Capitalising the word

108. Rapidly triple-clicking the left mouse button while pointing at text will result in:
(A) Selecting the entire document
(B) Selecting the single word
(C) Opening the spell checker
(D) Selecting the entire paragraph

109. Which keyboard shortcut moves the insertion point (cursor) to the very beginning of the document?

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10. (A) P-3, Q-1, R-4, S-2
The Quick Access Toolbar holds frequently used commands such as Save and Undo. The Ruler assists in setting page margins, paragraph indents, and tab stops. The Status Bar indicates contextual metrics like current page count and total word count. The Ribbon consists of organized tabs containing operational buttons and visual commands for document creation and formatting tasks.

11. (D) Document1
When a new blank document is created in Microsoft Word, the application automatically assigns it a temporary generic title starting with Document1. Subsequent new documents created during the same session are sequentially named Document2, Document3, and so on. This temporary label persists in the title bar until the user specifies a custom file name during saving.

12. (B) Once a file is saved, its name cannot be changed using the Save As option.
The Save As command explicitly allows users to rename an existing saved file or save a duplicate copy under a different file name, location, or format. Word supports saving files directly as PDF documents, offers automatic file recovery via AutoRecover, and uses the Ctrl + S key combination to perform standard document saving operations during regular work.

13. (C) Cut
The Cut command removes selected text, graphic objects, or data structures from their original location in a document and places them into the temporary system clipboard memory. The stored content can subsequently be relocated and inserted into a new position or file using the Paste command, facilitating seamless text reorganization without leaving original residual text behind.

14. (D) Go to File Menu → Save As → Choose Location → Select PDF in 'Save as type' → Click Save
Exporting or saving a Word document as a PDF file requires navigating to the File menu and selecting the Save As option. After choosing the desired storage destination, the user sets the 'Save as type' drop-down list to PDF and clicks Save. This process generates a standardized, non-editable document preserved across different viewing hardware platforms.

15. (A) Clipboard
When text or visual items are copied or cut in Microsoft Word, they are temporarily stored in a designated system memory area known as the Clipboard. The Clipboard retains this data in memory so that it can be pasted multiple times into different positions within the same document or across other compatible software applications operating on the system.

16. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Justified alignment aligns text evenly along both the left and right margins of a paragraph. To achieve clean, straight edges on both sides, Microsoft Word dynamically adjusts and balances the spacing between individual words on each line. Consequently, the reason accurately explains the mechanical formatting technique used by the application to produce fully justified text blocks.

17. (B) A pre-designed document used as a starting point for a new document
A template in Microsoft Word is a pre-formatted master file that contains layout structures, formatting styles, fonts, and boilerplate text. It serves as a reusable foundation for creating standardized new documents, such as resumes, business letters, invoices, and reports, saving users time and ensuring consistent document styling across organizational and personal communication files.

18. (A) Pastes content from the clipboard
The keyboard shortcut Ctrl + V executes the Paste command in Microsoft Word and across most computing applications. It transfers previously cut or copied text, images, and formatting stored in the temporary system Clipboard directly into the active document at the current position of the insertion point cursor, allowing easy data movement and duplication.

19. (C) Points
Font sizes in Microsoft Word and standard desktop publishing applications are measured in points. One point is equal to 1/72nd of an inch in physical measurement. Adjusting point sizes allows users to precisely scale text elements, ranging from fine print to prominent display titles, maintaining proportional layout scaling across printed documents and screen visual displays.

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20. (C) I, II and III only
Bold, italic, and underline are standard font styles, Ctrl + D opens the Font dialog box, and strikethrough draws a line through text. These three statements are factual. However, default font size in modern Word versions can easily be altered and saved permanently by users through the Font dialog box, making the fourth statement completely false.

21. (A) Ctrl + B
The keyboard shortcut Ctrl + B is used to toggle bold formatting on selected text in Microsoft Word. Applying bold formatting thickens the stroke width of text characters, making them darker and visually prominent compared to regular text. It is commonly applied to headings, key terms, or emphasized content within structured textual documents.

22. (D) Title Case
The Change Case drop-down menu in Microsoft Word includes five specific options: Sentence case, lowercase, UPPERCASE, Capitalize Each Word, and tOGGLE cASE. Title Case is not listed under that exact label within the Change Case menu; the functionality of capitalizing the first letter of each word is explicitly named "Capitalize Each Word" in the interface.

23. (A) The text appears slightly below the normal line of text.
Subscript formats selected text to appear smaller and positioned slightly below the standard baseline of surrounding text characters. It is commonly utilized in scientific notation, mathematical formulas, and chemical formulas, such as writing chemical compounds like H_2O. Users can toggle subscript formatting using the interface icon or the shortcut Ctrl + Equals.

24. (C) P-3, Q-2, R-4, S-1
The Ctrl + I shortcut applies italic formatting to text, while Ctrl + U applies underline formatting. Paragraph alignment key combinations include Ctrl + E for centering text between margins and Ctrl + L for aligning text along the left page margin. Matching these shortcut keys with their corresponding actions yields the established formatting sequence accurately.

25. (A) Line spacing
Line spacing refers to the vertical distance measured between lines of text within a paragraph. In Microsoft Word, users can adjust line spacing to standard values such as single, 1.15, 1.5, or double spacing. Modifying line spacing improves document readability, satisfies specific publication guidelines, and enhances the overall aesthetic appearance of formatted text blocks.

26. (D) Justify
Justify alignment distributes text evenly between the left and right page margins of a paragraph. By varying spacing between individual words on each line, Word creates straight vertical boundaries along both side edges of the text block. This alignment is widely used in newspapers, published books, academic papers, and formal multi-column documents.

27. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Gutter margins provide extra blank space added specifically to the side or top margin of a document intended for physical binding. This prevents text near the spine from being obscured or cropped after binding takes place. Thus, the reason accurately describes the functional implementation of gutter space to justify the assertion regarding document readability.

28. (C) Format Painter
Format Painter is a utility in Microsoft Word that allows users to copy formatting attributes—such as font style, size, color, and paragraph alignment—from selected text and quickly apply them to other text blocks. It eliminates manual formatting steps, ensuring uniform visual styling across headers, body text, and callouts throughout long document projects.

29. (A) A large capital letter at paragraph start spanning multiple lines.
A Drop Cap is a large initial capital letter placed at the beginning of a paragraph that drops down across two or more lines of normal text height. It is a classic typographic design feature used primarily in books, magazines, newsletters, and formal articles to signal the start of a major section and add visual interest.

30. (A) I and II only
Indentation controls paragraph distance from left and right margins, and a first-line indent shifts only the opening line inward. These statements are correct. However, line spacing

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is highly customizable and can be configured to custom fractional line values or exact point measurements, rendering the third statement inaccurate and restricting correct options to statements I and II.

31. (D) Left aligned
Left alignment is the default text alignment setting for new documents created in English and other left-to-right languages in Microsoft Word. In left-aligned paragraphs, text lines align flush against the left margin while leaving a ragged right edge, offering optimal readability and standard visual flow for general correspondence, reports, and administrative writing.

32. (B) Ctrl + R
The shortcut key combination Ctrl + R shifts and aligns selected paragraph text flush along the right page margin in Microsoft Word. It is commonly used for placing elements like dates, headers, signature lines, or right-aligned page references cleanly against the right margin border while leaving the left edge uneven or unaligned.

33. (C) Numbering
Numbering is used to construct ordered lists where sequential progression, step-by-step instructions, or item priority is essential. Microsoft Word offers numerical formats, letters, and Roman numerals to structure list items. Unlike bulleted lists which represent unordered data, numbered lists maintain precise sequential order across procedures, rankings, and formal legal document outlines.

34. (D) Double click the Format Painter button
Double-clicking the Format Painter button activates the tool permanently until explicitly turned off. This feature allows users to apply copied character and paragraph formatting to multiple non-adjacent text selections throughout a document continuously. Once all formatting applications are complete, pressing the Escape key or clicking the button again deactivates the persistent tool mode.

35. (A) Ctrl + 2
The keyboard shortcut Ctrl + 2 sets the line spacing of the active paragraph to double spacing in Microsoft Word. Double spacing adds vertical blank space equivalent to two full line heights between adjacent text lines. In comparison, Ctrl + 1 sets single line spacing, and Ctrl + 5 applies 1.5 line spacing to paragraphs.

36. (B) 2, 4, 1, 3
To apply numbering to existing text, the user first selects the target text. Next, they navigate to the Home tab on the Ribbon and locate the Paragraph group. Then, they click the Numbering command icon to view list options, and finally choose their preferred numbering style from the drop-down menu to format the list.

37. (D) Clear All Formatting
The Clear All Formatting command strips away all applied character and paragraph formatting from selected text—including custom font styles, highlighting, sizes, colors, and line spacing settings. It reverts the text back to Microsoft Word's standard default Normal style, allowing users to remove unwanted or inconsistent formatting attributes quickly with one single click.

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38. (B) 1638
The maximum font size that a user can manually enter into the Font Size box in Microsoft Word is 1638 points. While the default drop-down menu offers preset sizes ranging up to 72 points, typing a custom numeric value directly allows scaling text up to 1638 points, providing extensive control over giant typography.

39. (C) Ctrl +]
Pressing Ctrl +] increases the font size of selected text incrementally by exactly 1 point in Microsoft Word. Conversely, pressing Ctrl + [decreases the font size by 1 point. Using these precise bracket shortcuts enables users to fine-tune text scaling point by point without needing to select values from the visual drop-down font menu.

40. (B) I, II and III only
Password-encrypted documents require authentication, Ctrl + W closes active document windows, and F12 opens the Save As dialog window. These three statements are accurate. However, Microsoft Word easily opens plain text files (.txt), making statement IV false. Therefore, the combination containing statements I, II, and III represents the correct option group.

41. (D) Landscape
Landscape is one of two standard page orientation modes available in Microsoft Word, the other

(D) Web Layout

123. Which view is useful for organizing the structure of a long document by promoting or demoting headings?
(A) Draft View
(B) Print Layout
(C) Reading View
(D) Outline View

124. The Navigation Pane in MS Word can be used for which of the following?
(A) Browsing headings in the document
(B) Searching for specific text
(C) Viewing page thumbnails
(D) All of the above

125. An automatic Table of Contents in MS Word is generated based on:
(A) The physical coordinates and visual location of body text on the page.
(B) The presence of manually bolded and underlined text elements in the document.
(C) Application of built-in Heading styles in the document.
(D) The custom sizing and point scale of the various fonts used throughout.

126. A reference to a specific place or piece of text within the same document is known as a:
(A) Hyperlink
(B) Cross-reference
(C) Drop Cap
(D) Bookmark

127. Which feature refers to a note placed at the bottom of the current page containing supplementary information about the text?
(A) Footnote
(B) Header
(C) Endnote
(D) Citation

128. Where are Endnotes placed in a document by default?
(A) At the bottom of each page
(B) At the end of the entire document
(C) In the page margin
(D) Immediately after the paragraph containing the reference

129. What is the keyboard shortcut to insert a Footnote in MS Word?
(A) Ctrl + Shift + F
(B) Alt + Ctrl + F
(C) Alt + Shift + F
(D) Ctrl + F

130. To insert special characters that are not available on a standard keyboard (like ©, ™, or mathematical symbols), you should use the:
(A) Symbol dialog box
(B) Equation Builder tool
(C) Format Painter utility
(D) SmartArt Graphics tool

131. Which tool in MS Word allows you to build complex mathematical formulas?
(A) Symbol
(B) Macro
(C) Equation
(D) SmartArt

132. What is the file extension for an MS Word document that contains embedded macros (Macro-Enabled Document)?
(A) .docx
(B) .dotx
(C) .doc
(D) .docm

133. What is the file extension for a Word Template file?
(A) .dotx
(B) .docx
(C) .txt
(D) .pdf

134. If an office worker wants to create a standardized Leave Application form with fillable fields, they would typically save the master file as a:
(A) Web Page
(B) Template
(C) Text Document
(D) PDF

135. The space left on a page when text is fully justified but the last line falls short of the right margin is correctly handled by Word. Which problem does justify alignment sometimes cause that Word can fix using Hyphenation?
(A) Text overlapping across adjacent document lines
(B) Body text extending beyond specified page margins
(C) White space gaps between words
(D) Automatic bolding applied to paragraph text

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52. (C) A4
A4 is the standardized paper size widely used in India, Europe, and many international regions for official documentation, office printing, academic papers, and government records. Standard A4 dimensions measure 210 millimeters in width by 297 millimeters in height (8.27 x 11.69 inches), serving as default page setup across printing software.

53. (D) Ctrl + P
The keyboard shortcut Ctrl + P opens the Print pane in Microsoft Word. This view combines printer selection options, page range inputs, copy count adjustments, paper size configurations, and margin controls alongside an interactive Print Preview display, enabling users to evaluate document layout visually before sending output files to physical printers.

54. (A) Print Layout
Print Layout view is the default document view in Microsoft Word. It displays pages exactly as they will appear when printed, showing complete page boundaries, headers, footers, margins, columns, and graphics placement. This view allows users to edit content while simultaneously monitoring document layout and formatting integrity accurately on screen.

55. (B) It prints pages sequentially (1, 2, 3...) as complete sets.
When printing multiple copies of a multi-page document, enabling the Collate setting causes the printer to output complete document sets in sequential order (1, 2, 3...) before printing the next set. This eliminates the need to manually sort individual printed pages into ordered document stacks after printing completes.

56. (C) 2, 4, 5-6, 8
In Microsoft Word's Print settings, specific non-consecutive page numbers are separated by commas, while contiguous ranges of pages are specified using hyphens. Therefore, specifying page 2, page 4, the range from page 5 to 6, and page 8 is correctly formatted in the Pages input field as 2, 4, 5-6, 8.

57. (D) Continuous Section Break
A Continuous Section Break starts a new document section on the exact same page without forcing a page break. It allows users to apply varying formatting styles—such as switching between single-column and multi-column text layouts—on a single physical page, maintaining design flexibility within complex document layouts.

58. (A) I, II and IV only
Using section breaks permits mixed page orientations, built-in margin presets include Narrow and Wide, and line numbers can be displayed in margins. However, paper sizes can easily be fully customized to unique measurements using custom dimension inputs, making statement III false and validating statements I, II, and IV as correct.

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59. (C) Layout Tab
The Page Setup group is located on the Layout tab of the Ribbon in Microsoft Word. This group consolidates core page configuration commands, including margin adjustments, page orientation options, paper size selection, column layout division, section breaks insertion, line numbering controls, and paragraph hyphenation settings for complete document layout control.

60. (D) Export to PDF creates a non-editable file, while Save retains document editability.
Saving a document in standard Word formats (.docx) preserves full file editability, enabling ongoing revisions. In contrast, exporting a document to PDF generates a read-only snapshot designed for consistent visual display across device platforms, locking text layout and formatting to prevent easy or accidental content editing by recipient users.

61. (A) 1 row and 1 column
The minimum structural size for a functional table created in Microsoft Word consists of 1 row and 1 column, forming a single individual table cell. Users can insert this basic structure and subsequently expand it by adding additional rows or columns above, below, or alongside as required by project data needs.

62. (B) Tab
Pressing the Tab key inside a table cell moves the insertion point cursor to the next adjacent cell to the right within the same row. If the cursor is positioned in the final cell of the bottom row, pressing Tab automatically appends a new empty row at the table bottom.

129. (B) Alt + Ctrl + F
The keyboard shortcut Alt + Ctrl + F inserts a footnote immediately into a Microsoft Word document. Pressing this key combination places a superscript reference number at the current cursor position and automatically shifts focus down to the bottom page margin where the corresponding note text can be entered directly.

130. (A) Symbol dialog box
The Symbol dialog box, accessible from the Insert tab, allows users to insert specialized characters not found on standard keyboards. These include copyright symbols (©), trademark symbols (™), currency symbols, foreign language accented letters, arrows, and mathematical operators, expanding text capabilities beyond standard keyboard key limits significantly.

131. (C) Equation
The Equation tool in Microsoft Word provides built-in templates and math tools to build complex mathematical formulas and scientific expressions. Users can construct fractions, integrals, matrices, radicals, and summation symbols cleanly using specialized formatting, facilitating technical documentation for academic, scientific, and engineering publications effectively.

132. (D) .docm
The .docm file extension designates a Macro-Enabled Word Document created in modern Microsoft Word versions. This specialized XML-based file format explicitly allows embedded Visual Basic for Applications (VBA) macro scripts to execute, distinguishing macro-enabled files from standard macro-free .docx documents to enhance system security protocols overall.

133. (A) .dotx
The .dotx file extension represents a standard macro-free Microsoft Word Template file. Templates store pre-configured layouts, styles, macros, and formatting definitions used to spawn uniform new documents. Utilizing .dotx files ensures that original master template settings remain untouched whenever new derivative document files are opened and saved later.

134. (B) Template
Saving a standardized, fillable form as a Template (.dotx) ensures that every time a worker opens the file, a new untitled instance is generated based on the master design. This preserves the original form layout and protects the master file from being overwritten accidentally during routine leave application filling tasks.

135. (C) White space gaps between words
When justify alignment is applied across lines containing long words, Word expands spaces between words to make lines reach both margins, creating unsightly white space gaps. Enabling the Hyphenation feature breaks long words across line boundaries using hyphens, smoothing word distribution and eliminating uneven spacing gaps completely.

136. (D) Design Tab
The Design tab in Microsoft Word provides centralized tools for managing document visual themes, color palettes, font pairings, and paragraph spacing style sets. It also contains background formatting features, such as Watermark, Page Color, and Page Borders, enabling users to transform document styling globally with single mouse clicks.

137. (A) Watermark
When configuring Page Borders in Microsoft Word, available border setting choices include Box, Shadow, 3-D, and Custom borders, alongside customizable line styles, colors, widths, and artistic designs. Watermark is a separate background text or image feature and is not an option within the Page Border configuration options menu.

138. (B) Shift + F3
Pressing the keyboard shortcut Shift + F3 toggles selected text through case settings in Microsoft Word. Successively pressing Shift + F3 cycles highlighted text through UPPERCASE, lowercase, and Capitalize Each Word (Title Case) formats, allowing users to reformat text capitalization instantly without retyping words manually or individually.

139. (C) PDF preserves formatting intact and prevents easy modification.
PDF format is preferred for official document distribution because it freezes layout visual appearance, font styles, and graphics across all device platforms and printing hardware. Furthermore, PDF files prevent accidental content edits or unauthorized alteration, offering

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74. (D) Crop
The Crop tool in Microsoft Word allows users to trim and remove unwanted outer areas, margins, or background sections of an inserted image. Cropping narrows image focus to essential visual content without distorting image aspect ratios or requiring external graphic editing software prior to embedding pictures into documents.

75. (A) Width and height proportions are maintained to prevent distortion.
Enabling 'Lock aspect ratio' ensures that an image's width and height adjust proportionally whenever it is resized. This automatic scaling maintains original dimensional proportions, preventing inserted photos or visual graphic objects from becoming visually stretched, squished, or distorted when modifying image size within document layouts.

76. (B) Mailings Tab → Start Mail Merge → Choose Document Type
Initiating a Mail Merge process in Microsoft Word begins by opening the Mailings tab on the Ribbon. Next, the user clicks the 'Start Mail Merge' command button located in the Start Mail Merge group and selects the target document type, such as Letters, Envelopes, Labels, or Email Messages, from the menu.

77. (C) SmartArt
SmartArt is a graphic design feature in Microsoft Word used to convert information into structured visual diagrams. It includes predefined layouts for organizational charts, process workflows, hierarchy diagrams, cycle relationships, and pyramid structures, enabling users to communicate complex conceptual ideas and data structures cleanly without manual shape drawing.

78. (D) Insert > Shapes
To insert basic geometric drawing shapes—such as triangles, rectangles, arrows, banners, stars, or callouts—users navigate to the Insert tab on the Ribbon and select the Shapes menu in the Illustrations group. Choosing a shape allows drawing customizable, highly scalable vector graphic objects directly onto document pages.

79. (A) Insert an image of any open program window on your desktop.
The Screenshot tool located on the Insert tab in Microsoft Word allows users to capture and embed visual image snapshots of any active, unminimized application window running on their desktop screen, or use the Screen Clipping tool to select specific screen sub-regions directly into active document pages.

80. (A) I, II and IV only
Headers are positioned at page tops, Tables of Contents generate from Heading styles, and page numbers support Roman numeral styling. However, Microsoft Word features a dedicated built-in Equation Builder to insert complex mathematical formulas, making statement III false and verifying that statements I, II, and IV are correct.

81. (A) F7
Pressing the F7 function key triggers the Spelling and Grammar proofing tool in Microsoft Word. It scans the document sequentially for misspellings, typographical errors, and grammatical inconsistencies, presenting suggested corrections in a side pane where users can accept, ignore, or edit flagged words to improve document accuracy.

82. (D) A spelling error
A red wavy line underneath a word in Microsoft Word indicates a recognized spelling error. It occurs when a typed word does not match any entry stored in the active system dictionary. Users can right-click the flagged word to view spelling suggestions, add it to the dictionary, or ignore the warning.

83. (B) A grammatical or contextual error
A blue wavy line underneath text in Microsoft Word highlights a potential grammatical error, structural inconsistency, or contextual misspelling—such as using "their" instead of "there." The proofing engine flags these syntax or usage mistakes to help users maintain proper grammar and polished prose throughout their writing.

84. (C) Thesaurus
The Thesaurus tool in Microsoft Word provides lists of synonyms and antonyms for selected words. Accessible via the Review tab or the Shift + F7 key shortcut, it helps writers expand vocabulary, avoid word repetition, find precise phrasing, and enhance the overall stylistic quality of written document text.

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63. (C) Merging cells
Merging cells is the procedure of combining two or more adjacent table cells—either horizontally across columns or vertically down rows—into a single unified cell. It is commonly used to create span headers, display titles across multiple data columns, or customize complex table layout layouts in Microsoft Word documents.

64. (D) P-4, Q-3, R-1, S-2
Merging combines multiple selected cells into one cell. Splitting divides a single cell into multiple row and column cells. AutoFit to Contents resizes column widths to fit enclosed data automatically. Insert Above adds a new row directly above the selected row location. This sequence matches table operations to functional descriptions correctly.

65. (C) Divides a single cell into multiple cells
The Split Cells option in Microsoft Word allows users to divide a single selected table cell into multiple smaller cells by specifying a desired number of rows and columns. This feature facilitates complex tabular structural organization without requiring the creation of an entirely separate new table within the document layout.

66. (B) Pictures
To insert an image file saved on system storage into a document, users navigate to the Insert tab and click the Pictures button. This opens a file browsing window enabling users to select and embed graphics—such as photos, diagrams, or digital illustrations—directly onto the active page canvas.

67. (D) Text Wrapping
Text Wrapping determines how surrounding document text flows around inserted graphical objects, photos, or shapes in Microsoft Word. Available wrapping styles include In Line with Text, Square, Tight, Through, Top and Bottom, Behind Text, and In Front of Text, giving users detailed layout control over visual object placement.

68. (A) WordArt
WordArt is a decorative text feature in Microsoft Word that allows users to apply stylized typography effects to text strings. These visual enhancements include custom text fills, gradients, outlines, 3D rotations, drop shadows, and curved transformations, making WordArt ideal for creating eye-catching document headings, cover titles, and banner accents.

69. (C) It allows positioning text anywhere on a page independently of normal body text.
A Text Box is a customizable graphic container that holds text and can be placed anywhere on a document page. It operates independently of standard paragraph alignment, enabling users to create sidebars, callout quotes, graphic overlays, and floating text segments that can be freely moved, resized, and formatted across pages.

70. (A) I and II only
Tables can be converted to plain text, and tabular column data can easily be sorted alphabetically or numerically. These two statements are factual. However, Word tables support basic mathematical formulas such as SUM and AVERAGE, making statement III false and confirming that statements I and II are the correct ones.

71. (D) Ctrl + K
The shortcut key combination Ctrl + K opens the Insert Hyperlink dialog box in Microsoft Word. This allows users to attach external website links, email addresses, file pathways, or internal document bookmarks to selected text or images, turning static content into interactive elements within digital documents.

72. (B) It links text or graphics to a webpage, email, or document location.
A hyperlink connects selected text, icons, or graphic elements to external resources—such as internet URLs, separate document files, or email addresses—or internal locations like document headings and bookmarks. Clicking a hyperlink opens the linked destination, facilitating interactive navigation and seamless resource reference within electronic documents.

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73. (C) Right-click link and choose 'Remove Hyperlink'
To remove an active hyperlink without deleting the display text, the user right-clicks the hyperlinked element and selects 'Remove Hyperlink' from the context menu. This action strips away the embedded navigation link and blue underlined style while preserving the underlying text completely intact inside the document body.

by the proofing checker, making grammar errors exempt from Word Count statistics.

96. (B) AutoCorrect
AutoCorrect automatically corrects common typographical, spelling, and capitalization errors as text is typed—such as instantly correcting "teh" to "the." It also supports customizable abbreviation expansion and automated symbol insertion shortcuts, reducing manual proofing steps and accelerating typing efficiency across Microsoft Word documents.

97. (C) cattle
Enabling the "Find whole words only" option restricts search algorithms to exact, standalone word matches. Searching for "cat" under this setting will match standalone instances like "cat", capitalized "CAT", or punctuated "cat.", but will ignore words like "cattle" where "cat" forms only a sub-string component of a larger word.

98. (D) To record a series of commands to automate repetitive tasks.
A Macro in Microsoft Word is a recorded sequence of commands, keystrokes, and formatting steps that can be executed automatically using a single action or shortcut key. Macros eliminate repetitive editing steps, streamline workflow consistency, and automate complex multi-step document formatting routines efficiently across user files.

99. (A) File > Info
Comprehensive document metadata—including file size, page count, word count, total editing time, author name, creation date, and last modification timestamp—is located under the File > Info tab in Microsoft Word. This backstage pane provides centralized visibility over essential file properties and document management protection options.

100. (B) I, II and III only
The Translate feature converts foreign text, Accept/Reject controls process tracked edits, and Restrict Editing blocks unauthorized edits. These three statements are correct. However, Word Count accurately provides line counts alongside word statistics, making statement IV false and confirming that statements I, II, and III are valid statement options.

101. (D) Ctrl + Z
The keyboard shortcut Ctrl + Z executes the Undo command in Microsoft Word. It reverses the most recent editing action, text insertion, formatting change, or deletion performed in the document. Users can press Ctrl + Z sequentially multiple times to roll back a series of recent operational changes step-by-step.

102. (B) Ctrl + Y
The keyboard shortcut Ctrl + Y executes the Redo or Repeat command in Microsoft Word. It reinstates the last action that was undone using the Undo command, or repeats the most recent formatting or typing action, providing precise user control when managing edit histories and document revisions.

103. (C) Ctrl + A
Pressing Ctrl + A selects the entire text, graphics, tables, and objects contained within an active Microsoft Word document canvas simultaneously. This key shortcut enables users to execute global actions—such as changing font styles, adjusting document margins, or copying full content—without manually highlighting pages from start to finish.

104. (D) Ctrl + X
The keyboard shortcut Ctrl + X triggers the Cut command in Microsoft Word. It removes highlighted text or objects from their current position in the document and places them into the temporary system Clipboard memory, allowing content to be relocated elsewhere via the Paste command (Ctrl + V) seamlessly.

105. (A) Copies selected text
The keyboard shortcut Ctrl + C executes the Copy command in Microsoft Word. It duplicates selected text, images, or formatting objects to the temporary system Clipboard memory without removing the original items from the document, allowing users to duplicate content to new locations using Ctrl + V repeatedly.

106. (B) Moves the cursor one word to the right
Pressing Ctrl + Right Arrow advances the text insertion point cursor one complete word to the right in Microsoft Word. This navigation shortcut allows users to jump across text word by word, offering significantly faster document navigation compared to moving character by

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character using single directional arrow key presses continuously.

107. (C) Selecting that single word
Double-clicking the primary mouse button while pointing at a specific word selects that entire individual word instantly in Microsoft Word. This mouse action highlights the target word along with its adjacent trailing space, allowing fast visual selection for quick text edits, formatting adjustments, or deletion operations across documents.

108. (D) Selecting the entire paragraph
Triple-clicking the primary mouse button while positioning the cursor anywhere inside a text block selects the entire paragraph automatically in Microsoft Word. This rapid click gesture highlights all sentences and spacing within that specific paragraph block, enabling swift block editing, moving, or formatting without manual mouse dragging.

109. (A) Ctrl + Home
Pressing Ctrl + Home immediately relocates the text insertion point cursor to the very beginning of the document, placing it before the very first character on page one. This shortcut eliminates the need for manual scrolling, providing instant keyboard navigation back to the top of lengthy document files.

110. (B) Ctrl + End
Pressing Ctrl + End instantly moves the text insertion point cursor to the very end of the document, positioning it after the final character or object on the last page. This keyboard shortcut provides efficient user navigation when appending new content or reviewing concluding sections of extensive multi-page documents.

111. (C) Portable Document Format
PDF stands for Portable Document Format, a widely adopted open standard developed by Adobe for document distribution. PDF files preserve fixed typography, page layouts, graphic embedding, and structural formatting identically across diverse operating systems, devices, and printing hardware without requiring original layout software applications to view.

112. (D) Rich Text Format
RTF stands for Rich Text Format, a standardized cross-platform document format developed by Microsoft. RTF files store plain text along with basic layout and text formatting instructions—such as font styles, sizes, and alignments—enabling smooth file sharing and readability across different word processing software applications and operating environments.

113. (A) What You See Is What You Get
WYSIWYG stands for "What You See Is What You Get." It describes user interfaces, such as Microsoft Word, where document content displayed on the screen during editing closely mirrors the exact graphical layout, typography, line breaks, and page spacing that will appear when printed on paper or exported.

114. (B) 24
The Microsoft Office Clipboard can retain up to 24 separate copied or cut items at a single time. Users can view these stored items in the Clipboard task pane, allowing them to selectively paste individual collected elements or paste all stored items simultaneously into documents in any desired sequence.

115. (C) It copies formatting from selected text.
The shortcut combination Ctrl + Shift + C copies only the formatting attributes of selected text—such as font style, size, color, bolding, and line spacing—without copying the actual underlying text content. This copied formatting profile can then be pasted onto other target text using Ctrl + Shift + V.

116. (D) Ctrl + Shift + V
The keyboard shortcut Ctrl + Shift + V applies previously copied text formatting—captured using Ctrl + Shift + C—directly onto newly selected text. This shortcut provides a quick keyboard alternative to using the Format Painter tool, ensuring rapid visual styling consistency across document headings, subheadings, and body paragraphs effectively.

117. (A) Opens the Save As dialog box
Pressing the F12 function key in Microsoft Word instantly opens the Save As dialog window. This allows users to save the current document under a new file name, change its file format type (such as converting to PDF or RTF), or choose a different storage folder location on the system.

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118. (B) Shift + Enter
Pressing Shift + Enter inserts a soft line break in Microsoft Word. A soft line break advances the insertion point to the next line immediately

without creating a new paragraph, preserving ongoing paragraph formatting, bullet numbering sequence, and line spacing parameters established for that specific text block completely.

119. (C) Header and Footer
The Header and Footer feature is the ideal tool for creating standardized letterheads that repeat across multi-page documents. Content placed in the top header region—such as company logos, address lines, and contact information—automatically displays on every page, maintaining professional visual consistency across all pages of the letter project.

120. (D) Mail Merge
Mail Merge is the most efficient feature for producing standardized mass correspondence sent to hundreds of different recipients. It combines a single master letter document with a structured recipient data source, dynamically generating 500 individual letters with unique recipient names and addresses while keeping core message text completely uniform throughout.

121. (A) Encrypt document with password via Protect Document settings.
Encrypting a document with a password via the Protect Document settings provides robust file security in Microsoft Word. It applies cryptographic protection that prevents unauthorized individuals from opening, reading, or modifying document contents without first supplying the correct secret password established by the document author initially.

122. (B) Read Mode
Read Mode maximizes on-screen reading comfort by hiding non-essential user interface elements, including toolbars and the Ribbon. It automatically reorganizes document text into clean horizontal column layouts optimized for screen display, providing smooth page navigation tools ideal for reviewing documents on laptop screens, desktop displays, or tablet screens.

123. (D) Outline View
Outline View displays a document's structural hierarchy based on assigned Heading styles. It enables users to promote or demote heading levels, collapse or expand section contents, and reorganize entire document sections by dragging headings, making it an invaluable tool for planning, structuring, and editing lengthy documents efficiently and systematically.

124. (D) All of the above
The Navigation Pane in Microsoft Word serves multiple navigation functions. It allows users to browse document headings structurally, perform fast searches for specific words or phrases, and visually inspect page thumbnails. Combining these versatile tools in one panel makes managing and navigating complex multi-page files fast and reliable overall.

125. (C) Application of built-in Heading styles in the document.
An automatic Table of Contents in Microsoft Word is generated by scanning the document for text formatted with built-in Heading styles (such as Heading 1, Heading 2, and Heading 3). Word compiles these structured headings along with their corresponding page numbers, creating an accurate, clickable navigation index automatically across pages.

126. (D) Bookmark
A bookmark in Microsoft Word identifies and names a specific location, text selection, or section within a document for future reference. Bookmarks allow users to jump directly to marked locations using the Go To command or link to them via hyperlinks and cross-references, enhancing navigation within complex document files.

127. (A) Footnote
A footnote consists of a detailed reference note, citation, or supplementary comment placed at the bottom margin of the page containing the corresponding reference marker. Marked by superscript numbers or symbols in the body text, footnotes provide explanatory details without interrupting the main narrative flow of the document content.

128. (B) At the end of the entire document
Endnotes are reference notes placed collectively at the very end of a document or section in Microsoft Word. Unlike footnotes which appear at the bottom of each individual page, endnotes consolidate all citations, source credits, and extended bibliographic comments together on final pages following the document text body completely.

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85. (D) P-4, Q-3, R-2, S-1
A Red Wavy Line indicates a spelling mistake. A Blue Wavy Line flags contextual grammar errors. The F7 key initiates the main Spelling and Grammar check tool. Shift + F7 opens the Thesaurus task pane for synonym lookup. Matching these proofing elements yields the correct option mapping sequence accurately.

86. (A) Ctrl + H
The keyboard shortcut Ctrl + H opens the Replace tab within the Find and Replace dialog window in Microsoft Word. This command enables users to search for specific text strings or formatting attributes across a document and swap them out automatically with specified replacement text, accelerating document editing tasks.

87. (C) Page, line, or bookmark
The 'Go To' command, accessed via the shortcut Ctrl + G, enables rapid navigation through long documents. It allows users to jump directly to specific targets, such as page numbers, line numbers, bookmarks, comments, footnotes, tables, graphic objects, or section breaks without requiring manual scrolling through active document pages.

88. (A) To generate personalized documents for multiple recipients.
The primary objective of Mail Merge in Microsoft Word is to produce personalized, highly individualized batch communications—such as form letters, address labels, utilities invoices, or email notices—for multiple recipients simultaneously by automatically merging standard master document text with structured recipient data tables.

89. (C) Data Source
A Mail Merge operation depends on two fundamental components: the Main Document and the Data Source. The Main Document contains static narrative text and merge field placeholders, while the Data Source contains structured recipient information—such as names, addresses, and account details—used to populate individual output documents accurately.

90. (A) I and II only
Data Sources can be Excel sheets or Access databases, and Merge Fields act as placeholders for recipient data in main documents. However, final merged outputs can be printed directly without requiring prior PDF conversion, making statement III false and establishing statements I and II as the valid correct set.

91. (B) .xlsx file
An Excel workbook file with an .xlsx extension is commonly used as a data source during Mail Merge operations. The structured table format of spreadsheets—organized clearly into defined rows and labeled columns—allows Microsoft Word to map field names accurately and pull recipient record data into main document merge placeholders.

92. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Track Changes is essential for multi-user document collaboration. It visually records and highlights every addition, deletion, or formatting modification made to a document, enabling document authors to review each edit later and choose to accept or reject changes individually. The reason accurately explains the core mechanics behind the assertion statement.

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93. (C) Ctrl + Shift + E
The key combination Ctrl + Shift + E acts as the keyboard shortcut to toggle the Track Changes editing feature on and off in Microsoft Word. Activating this feature ensures that all subsequent edits, deletions, insertions, and formatting updates are highlighted visually, enabling transparent reviewing and editing across multiple collaborators.

94. (D) Comment
The Comment feature allows reviewers to attach explanatory notes, feedback, questions, or revision suggestions to specific text selections without altering actual document content. Comments display in side margin balloons or a side review pane, providing a non-destructive channel for editorial dialogue and collaborative document refinement during review.

95. (A) Number of Grammatical Errors
The Word Count tool provides detailed metrics regarding document size, quantifying total pages, word count, character count without spaces, character count with spaces, line counts, and paragraph counts. However, tracking grammatical error counts is handled separately

higher document integrity and presentation security than editable Word documents overall.

140. (D) Split
The Split command on the View tab divides the active document window into two separate, independently scrollable horizontal panes. This feature enables users to view and compare two distinct sections of a long document simultaneously—such as reading an introduction while writing conclusions—without constantly scrolling back and forth repeatedly.

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CHAPTER 11

Ms Excel Spreadsheet Processing

1. Which of the following best describes Microsoft Excel?
(A) A word processing application used to create and edit documents
(B) A spreadsheet application used for data analysis and calculations
(C) A presentation graphics program used to design visual slides
(D) A database management system used to build relational databases

2. What is the fundamental difference between a workbook and a worksheet in MS Excel?
(A) A workbook is a single file that can contain multiple worksheets
(B) A worksheet contains multiple workbooks
(C) A workbook is used for text, while a worksheet is used for numbers
(D) There is no difference; the terms are completely interchangeable

3. In a spreadsheet, what is the intersection of a row and a column called?
(A) A grid
(B) A block
(C) A cell
(D) A field

4. In the MS Excel screen structure, how are rows and columns typically identified?
(A) Both rows and columns are identified by numbers
(B) Columns are identified by numbers and rows are identified by letters
(C) Both rows and columns are identified by letters
(D) Columns are identified by letters and rows are identified by numbers

5. Which of the following is NOT a valid cell address in MS Excel?
(A) A1
(B) Z99
(C) 12B
(D) AB25

6. What is the full form of CSV, a common format used to save Excel data?
(A) Central System Value
(B) Comma Separated Values
(C) Computer Saved Variable
(D) Calculated Standard Value

7. When you click on a cell in an Excel worksheet, a thick dark border appears around it. What does this indicate?
(A) The cell contains an error
(B) The cell is locked for editing
(C) The cell contains a formula
(D) The cell is the active cell

8. Find the odd one out among the following software applications.
(A) MS Word
(B) MS Excel
(C) Google Sheets
(D) LibreOffice Calc

9. Identify the correct statement regarding data entry in MS Excel.
(A) By default, text is right-aligned and numbers are left-aligned in a cell
(B) By default, both text and numbers are center-aligned in a cell
(C) By default, text is left-aligned and numbers are right-aligned in a cell
(D) By default, all entered data is justified to fit the cell width

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10. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Microsoft Excel is widely used for statistical and financial work in offices.
Reason (R): Excel provides built-in mathematical functions, charts, and data sorting features.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

11. Which area of the MS Excel interface displays the contents or the underlying formula of the currently active cell?
(A) Name Box
(B) Status Bar
(C) Title Bar
(D) Formula Bar

12. What happens when you press the Enter key after typing data into a cell in MS Excel?
(A) The data is deleted and the cell remains active
(B) The cursor moves to the cell immediately below
(C) The cursor moves to the cell immediately to the right
(D) The cursor moves to the cell immediately above

13. Which of the following is the most appropriate description of the Name Box in MS Excel?
(A) It allows users to view and edit the name of the active worksheet
(B) It allows users to search for a specific file name in the system
(C) It displays the cell reference or name of the active cell
(D) It displays the complete formula entered in the active cell

14. Which feature in MS Excel is used to automatically fill a series of data (like days of the week or sequential numbers) by dragging the bottom-right corner of a cell?
(A) Format Painter
(B) AutoSum
(C) Data Validation
(D) Fill Handle

15. Consider the following statements about MS Excel screen structure:
I. A new blank workbook typically opens with at least one default worksheet.
II. The zoom control slider is usually located on the status bar.
III. The Ribbon contains tabs like Home, Insert, and Formulas.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II, and III

16. What is the default name assigned to the first worksheet in a new MS Excel workbook?
(A) Document1
(B) Sheet1
(C) Book1
(D) Page1

17. Which of the following cannot be directly entered into an Excel cell as data?
(A) Numerical values and dates
(B) Hardware driver settings
(C) Text strings and characters
(D) Mathematical formulas

18. Identify the incorrect statement regarding the formatting of cells in MS Excel.
(A) You cannot apply background colors to individual cells.
(B) You can change the font style and size of the text within a cell.
(C) You can apply various border styles around a cell or a range of cells.
(D) You can change the orientation of the text inside a cell.

19. If you want to add a new blank worksheet to your current workbook, which shortcut button is typically used?
(A) The Insert Function icon located directly on the formula bar
(B) The AutoSum icon located under the Home tab options
(C) The '+' (plus) icon next to the existing sheet tabs
(D) The Magnifying glass icon located on the status bar

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20. Match the Excel elements in List I with their descriptions in List II.
List I: (Excel Elements)
P. Workbook
Q. Worksheet
R. Cell
S. Name Box
List II: (Descriptions)
1. Intersection of a row and a column
2. Displays the address of the active cell
3. A single page containing a grid of rows and columns
4. An Excel file containing one or more sheets
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-1, Q-2, R-3, S-4

(B) =MAX(A1:A10)
(C) =MAXIMUM(A1:A10)
(D) =HIGHEST(A1:A10)

45. Consider the following statements about Excel functions:
I. The MIN function returns the smallest number in a set of values.
II. The COUNT function counts all cells, including empty ones, in a given range.
III. The SUM function can accept both cell ranges and individual numbers separated by commas.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only I and III
(C) Only II and III
(D) I, II, and III

46. Which of the following is NOT a valid predefined function name in MS Excel?
(A) AVERAGE
(B) MIN
(C) COUNT
(D) AVG

47. Identify the correct statement regarding the COUNT function in MS Excel.
(A) It counts only those cells that contain numbers.
(B) It counts only those cells that contain text.
(C) It counts all non-empty cells, regardless of data type.
(D) It counts only the empty cells in a range.

48. If cells C1, C2, and C3 contain the values 10, "Apple", and 20 respectively, what will the formula =COUNT(C1:C3) return?
(A) 3
(B) 2
(C) 1
(D) Error

49. What will be the result of the formula =MAX(5, 15, MIN(20, 10))?
(A) 20
(B) 15
(C) 10
(D) 5

50. Match the functions in List I with their basic operations in List II.
List I: (Functions)
P. SUM
Q. MAX
R. MIN
S. COUNT
List II: (Operations)
1. Returns the lowest value in a range
2. Counts the number of cells containing numbers
3. Returns the highest value in a range
4. Adds the values in a range
(A) P-4, Q-3, R-1, S-2
(B) P-4, Q-1, R-3, S-2
(C) P-2, Q-3, R-1, S-4
(D) P-3, Q-4, R-2, S-1

51. The IF function in MS Excel is used to:
(A) Return the total sum of numerical values that satisfy a specified conditional rule
(B) Return the count of all cells in a range that satisfy a specified criterion
(C) Return one value if a logical condition is TRUE and another if it is FALSE
(D) Return an error message whenever a mathematical calculation fails in a cell

52. How many arguments does the basic IF function take?
(A) One
(B) Two
(C) Three
(D) Four

53. What will be the result of the formula =IF(10>20, "Pass", "Fail")?
(A) Pass
(B) TRUE
(C) Fail
(D) FALSE

54. Find the odd one out among the following operators used in logical tests.
(A) >
(B) &
(C) <
(D) =

55. Consider the following statements about the IF function:
I. The first argument is always a logical test.
II. The second argument is the value to return if the test is TRUE.
III. Text returned by the IF function must be enclosed in double quotes.
IV. An IF function cannot be nested inside another IF function.
Which of the above statement(s) is/are correct?

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(D) # (Hash)

32. Which symbol is used as the operator for multiplication in an Excel formula?
(A) x
(B) *
(C) %
(D) ^

33. What is the most appropriate reason why the formula =2+3*4 returns 14 instead of 20?
(A) Excel evaluates addition prior to multiplication in simple formulas
(B) Excel follows the standard mathematical order of operations
(C) Excel evaluates all mathematical operators strictly from left to right
(D) Excel evaluates mathematical operations strictly from right to left

34. Which of the following is an invalid mathematical operator in MS Excel?
(A) \
(B) /
(C) *
(D) -

35. Select the correct order of evaluation for the following formula in MS Excel: =A1+B1*C1^2
(A) Addition, Multiplication, Exponentiation
(B) Exponentiation, Multiplication, Addition
(C) Multiplication, Addition, Exponentiation
(D) Exponentiation, Addition, Multiplication

36. If cell A1 contains 10 and cell A2 contains 5, what will be the result of the formula =A1/A2?
(A) 50
(B) 15
(C) 5
(D) 2

37. Identify the incorrect statement regarding formulas and functions in MS Excel.
(A) A formula can contain multiple mathematical operators.
(B) Functions are predefined formulas built into Excel.
(C) A formula can only contain numbers, not cell references.
(D) You can combine both functions and mathematical operators in a single formula.

38. What does the caret symbol (^) represent in an MS Excel formula?
(A) Division
(B) Exponentiation (Power)
(C) Percentage
(D) Subtraction

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39. Find the odd one out from the following Excel operators.
(A) +
(B) -
(C) *
(D) : (Colon)

40. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): When typing =SUM(A1:A5) in a cell, Excel will calculate the total of the values in cells A1 through A5.
Reason (R): The colon (:) is used as a range operator in MS Excel to refer to all cells between two specified references.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

41. Which of the following functions is used to add all the numbers in a range of cells?
(A) ADD()
(B) TOTAL()
(C) SUM()
(D) PLUS()

42. What does the AVERAGE function do in MS Excel?
(A) It calculates the arithmetic mean of a range of cells
(B) It determines the middle numerical value in a sorted dataset
(C) It counts the total number of non-empty cells in a range
(D) It identifies the most frequently occurring numerical value

43. If cells B1 to B4 contain the values 2, 4, 6, and 8, what will be the result of =AVERAGE(B1:B4)?
(A) 20
(B) 10
(C) 4
(D) 5

44. Which of the following correctly finds the largest value in the range A1 to A10?
(A) =LARGE(A1:A10)

108. If you use Data Validation to allow only 'Whole Numbers' between 1 and 10 in a cell, what happens if a user types 15?
(A) Excel automatically adjusts the entered number down to 10.
(B) Excel displays an Error Alert and rejects the entry.
(C) Excel automatically highlights the cell with a red background.
(D) Excel converts the numerical value into a plain text string.

109. Which tab on the Ribbon must you click to find the 'Data Validation' tool?
(A) Home Tab
(B) Insert Tab
(C) Data Tab
(D) View Tab

110. Match the Excel features in List I with their purposes in List II.
List I: (Excel Features)
P. Data Validation
Q. Freeze Panes
R. Conditional Formatting
S. Merge & Center
List II: (Purposes)
1. Highlights cells that meet certain criteria
2. Combines multiple cells into one
3. Restricts data entry to specific types/values
4. Keeps rows/columns visible while scrolling
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-1, Q-2, R-3, S-4

111. What is the basic concept of 'Conditional Formatting' in MS Excel?
(A) Changing cell formatting automatically based on cell value or formula rules
(B) Adjusting font size automatically according to the current width of the column
(C) Applying cell borders dynamically depending on whether the sheet is being printed
(D) Converting text entries automatically to uppercase whenever criteria are satisfied

112. If a teacher wants to highlight all student marks below 33 in red, which feature is most appropriate?
(A) Data Validation
(B) Conditional Formatting
(C) Find and Replace
(D) Format Painter

113. Which of the following is NOT a standard option under Conditional Formatting?
(A) Highlight Cells Rules
(B) Insert Chart Rules
(C) Top/Bottom Rules
(D) Data Bars

114. Which feature under Conditional Formatting creates a small bar graph inside the cell, where the length of the bar represents the cell's value relative to others?
(A) Data Bars
(B) Color Scales
(C) Icon Sets
(D) Highlight Rules

115. Consider the following statements about Conditional Formatting:
I. It can apply icons (like arrows or traffic lights) based on cell values.
II. You can apply multiple conditional formatting rules to the same cell.
III. Conditional formatting permanently changes the actual data in the cell.
IV. The 'Clear Rules' option removes conditional formatting from selected cells.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

116. Before printing an Excel spreadsheet, a user selects a specific block of cells and sets it as the 'Print Area'. What does this do?
(A) The selected block of cells will be excluded from the printout.
(B) The selected block of cells will be printed in color, while the rest prints in black and white.
(C) It scales the selected block to fit the entire printed page.
(D) Only the selected block of cells will be printed, ignoring the rest of the worksheet.

117. Identify the incorrect statement regarding the process of printing a spreadsheet.
(A) You can choose to print the active sheet, the entire workbook, or a specific selection.
(B) You can adjust the margins before printing.
(C) You cannot change the page orientation from Portrait to Landscape in Excel.
(D) You can choose to print gridlines if required.

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(A) I, II, and IV
(B) II, III, and IV
(C) I, II, and III
(D) I, III, and IV

56. What is the fundamental characteristic of a relative cell reference in MS Excel?
(A) It adjusts automatically when copied based on relative position
(B) It remains completely fixed and constant regardless of where it is copied
(C) It explicitly references a cell located on a completely different worksheet
(D) It restricts cell references strictly to cells containing numerical data

57. Which symbol is used to create an absolute cell reference in MS Excel?
(A) #
(B) @
(C) $
(D) &

58. Identify the correct statement regarding absolute cell references.
(A) It locks the row and column addresses when copied to other cells.
(B) The formula =A1*$B$1 is composed entirely of relative cell references.
(C) Pressing the F2 key automatically cycles a reference between relative and absolute.
(D) Absolute cell references are strictly required in every standard Excel formula.

59. If cell B2 contains the formula =A1+10, and you copy this formula and paste it into cell B3, what will the formula in B3 become?
(A) =A1+10
(B) =B1+10
(C) =B2+10
(D) =A2+10

60. Which of the following is NOT a type of cell reference in MS Excel?
(A) Relative Reference
(B) Active Reference
(C) Absolute Reference
(D) Mixed Reference

61. Which of the following is an example of a mixed cell reference?
(A) A1
(B) $A$1
(C) A$1
(D) =A1

62. Which of the following is the best practical reason to use an absolute reference?
(A) When you want a formula copied across rows to automatically update its cell references relative to each row
(B) When you need to establish a dynamic external link between two completely separate workbook files
(C) When you want to combine multiple adjacent cells into a single cell without deleting any stored data
(D) When you need a copied formula to consistently reference a single fixed cell, such as a tax rate

63. If cell C1 contains the formula =$A$1+B1, and this formula is copied to cell C2, what will the formula in C2 be?
(A) =$A$1+B2
(B) =$A$1+B1
(C) =$A$2+B2
(D) =$B$1+C1

64. Find the odd one out based on the concept of cell referencing.
(A) $C$5
(B) F5
(C) $D$10
(D) $Z$1

65. Consider the following steps to copy a formula using the Fill Handle in MS Excel:
I. Click and hold the small square at the bottom-right corner of the active cell.
II. Select the cell containing the formula you want to copy.
III. Drag the cursor down or across the cells where you want to copy the formula.
IV. Release the mouse button.
Which of the following options represents the correct sequential order of these steps?
(A) II, I, III, IV
(B) I, II, III, IV
(C) II, III, I, IV
(D) III, II, I, IV

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66. Identify the incorrect statement about cell references.
(A) A formula cannot combine absolute and relative references together.
(B) By default, all newly created cell references in an Excel formula are strictly relative.
(C) Pressing the F4 key while editing a formula cycles through relative, absolute, and mixed

(A) The Plot Area refers to the total rectangular space enclosing the chart and legend.
(B) The vertical Y-axis typically represents categorical labels in a standard Column chart.
(C) Horizontal gridlines cannot be customized or removed once a chart has been created.
(D) Data Labels display exact numerical values directly on chart elements.

88. If you select a table of sales data and press the F11 key, what will Excel do?
(A) Create a default chart on a new chart sheet
(B) Delete the entire selected table and its formatting
(C) Send the selected data directly to the default printer
(D) Open the main Data Validation dialog box interface

89. Which of the following best defines a "Data Series" in an Excel chart?
(A) The main descriptive header displayed at the top of the chart area
(B) The customizable background color or fill applied to the chart
(C) A row or column of numbers plotted on a chart
(D) The descriptive category labels placed along the horizontal X-axis

90. Find the odd one out among these MS Excel chart elements.
(A) Formula Bar
(B) Chart Area
(C) Legend
(D) Axis Titles

91. When you insert a new row in an Excel worksheet, where does it appear relative to the currently selected row?
(A) Below the selected row
(B) Above the selected row
(C) To the right of the selected row
(D) At the very bottom of the worksheet

92. When you insert a new column in an Excel worksheet, where does it appear relative to the currently selected column?
(A) To the left of the selected column
(B) To the right of the selected column
(C) At the beginning (Column A)
(D) At the very end of the active data

93. What is the fundamental difference between deleting a row and hiding a row in MS Excel?
(A) Hiding permanently clears cell data, whereas deleting merely conceals the row from display
(B) Hiding requires setting an administrative password, whereas deleting requires no password
(C) Deleting permanently removes data, while hiding temporarily conceals it
(D) There is no operational difference; both actions permanently purge data from the sheet

94. Identify the incorrect statement regarding the merging of cells in MS Excel.
(A) The 'Merge & Center' feature joins multiple selected adjacent cells into a single unified cell.
(B) You can easily split or unmerge cells that were previously combined using Merge & Center.
(C) Merging cells is frequently employed to center a prominent title across a data table.
(D) When merging multiple cells with data, only the top-left value is kept.

95. Select the correct order of steps to delete a specific worksheet from a workbook.
(A) Right-click the sheet tab → Select 'Delete'
(B) Click the Home tab → Select 'Format' → 'Hide Sheet'
(C) Double-click the sheet tab → Press Backspace
(D) Right-click a cell → Select 'Delete' → 'Entire Row'

96. If you select cells A1 and B1, where A1 contains "Hello" and B1 contains "World", and you click 'Merge & Center', what will the merged cell contain?
(A) Hello World
(B) Hello
(C) World
(D) A blank cell

97. What is a quick way to rename a worksheet in MS Excel?
(A) Right-click anywhere on the worksheet grid area and click Rename
(B) Double-click the worksheet tab and type the new name
(C) Press F2 on the keyboard while any active grid cell is selected
(D) Open the main Save As dialog box from the File tab menu

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77. Find the odd one out among the following MS Excel Data tools.
(A) Sort
(B) Filter
(C) Format Painter
(D) Data Validation

78. If you apply a Number Filter of "Greater Than 50" to a column containing student marks, what will happen?
(A) Marks less than or equal to 50 will be highlighted in red.
(B) Rows with marks greater than 50 will be hidden.
(C) Marks less than 50 will be automatically changed to 50.
(D) Rows with marks less than or equal to 50 will be hidden.

79. What is the primary purpose of creating charts and graphs in MS Excel?
(A) To represent data visually for easier analysis and comparison
(B) To artificially expand the overall file size of the current workbook file
(C) To protect and secure worksheet data against unauthorized editing access
(D) To automatically compute and evaluate complex statistical formulas in cells

80. Match the chart types in List I with their typical use cases in List II.
List I: (Chart Types)
P. Line Chart
Q. Pie Chart
R. Column Chart
S. Scatter Chart
List II: (Use Cases)
1. Comparing values across different categories using vertical bars
2. Showing trends over time (e.g., monthly sales)
3. Showing the relationship or correlation between two sets of numerical data
4. Showing proportions of a whole (percentages)
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-4, R-3, S-1
(D) P-1, Q-2, R-3, S-4

81. Which type of chart is best suited to show the market share percentage of five different smartphone brands?
(A) Line Chart
(B) Pie Chart
(C) Scatter Plot
(D) Area Chart

82. Which chart is primarily used to display continuous data over time, making it ideal for showing trends?
(A) Line Chart
(B) Pie Chart
(C) Doughnut Chart
(D) Radar Chart

83. What is the visual difference between a Column Chart and a Bar Chart in MS Excel?
(A) Column charts use horizontal bars, while Bar charts use vertical bars
(B) Column charts are 3D, while Bar charts are 2D
(C) Column charts use vertical bars, while Bar charts use horizontal bars
(D) There is no difference; they are exactly the same

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84. Which of the following is NOT a standard type of chart available in MS Excel?
(A) Pie Chart
(B) Bar Chart
(C) Line Chart
(D) Table Chart

85. Consider the following statements about charts in MS Excel:
I. A chart automatically updates if the source data is changed.
II. You can add a title to a chart.
III. You can change the chart type after it has been created.
IV. A pie chart can effectively display multiple separate data series.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

86. In an Excel chart, what is the term used for the small box that identifies the colors or patterns assigned to different data series?
(A) Data Label
(B) Legend
(C) Chart Title
(D) Axis

87. Identify the correct statement regarding chart elements in MS Excel.

types.
(D) A mixed reference locks either the row or the column reference, but never locks both at once.

67. The process of arranging data in a specific order (such as alphabetical or numerical) is called:
(A) Formatting
(B) Filtering
(C) Sorting
(D) Validating

68. Which sorting option would you use to arrange a list of names from Z to A?
(A) Ascending
(B) Custom Sort
(C) Top to Bottom
(D) Descending

69. If you want to sort a dataset by 'Department' first, and then by 'Salary' within each department, which feature must you use?
(A) Simple Ascending Order Sort
(B) Advanced Filter by Cell Color
(C) Custom Sort (Multiple Levels)
(D) Dynamic Conditional Formatting

70. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): When you sort a table containing names in Column A and phone numbers in Column B, you should select both columns before sorting.
Reason (R): Sorting only Column A will disrupt the relationship between the names and their corresponding phone numbers.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

71. In MS Excel, what is the primary function of the Filtering feature?
(A) To permanently delete unwanted data from the worksheet
(B) To highlight cells that meet specific conditions with a color
(C) To automatically correct spelling errors in the data
(D) To temporarily hide rows that do not meet specified criteria

72. When you apply a Filter to a dataset, what visual indicator appears in the column header cells?
(A) A drop-down arrow
(B) A tiny magnifying glass
(C) A red triangle in the corner
(D) A lock symbol

73. Which of the following is NOT an outcome of applying a filter to a column of data?
(A) Data that does not match the specified criteria is hidden from view
(B) The row numbers corresponding to filtered rows change to blue color
(C) The data is permanently deleted from the hard drive
(D) You can apply filters based on text values, numbers, or cell color

74. Identify the correct statement regarding filtering in MS Excel.
(A) 'Text Filters' allow options like 'Contains' or 'Begins With'.
(B) You can apply a 'Number Filter' to a column that only contains text.
(C) You can only apply a filter to one column at a time.
(D) Filtering rearranges the order of the rows alphabetically.

75. Consider the following statements about data sorting and filtering:
I. Sorting changes the order of data in a worksheet.
II. Filtering allows you to view only the data you need while hiding the rest.
III. You cannot apply a filter and a sort on the same column simultaneously.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II, and III

76. What is the most appropriate way to remove a filter and display all data again?
(A) Delete the column headers containing the filter arrows
(B) Click on 'Clear' in the Sort & Filter group on the Data tab
(C) Close the workbook and open it again without saving changes
(D) Use the Undo keyboard shortcut repeatedly until filter clears

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98. Which of the following is the most appropriate warning regarding deleting a worksheet in Excel?
(A) A deleted worksheet cannot be restored using Undo (Ctrl+Z).
(B) Deleting a single worksheet will permanently erase the entire workbook file.
(C) Deleting a worksheet automatically sends an alert email to the system administrator.
(D) Excel prevents users from deleting any worksheet if it contains numerical calculations.

99. Find the odd one out related to worksheet operations.
(A) Rename Sheet
(B) Insert Sheet
(C) Merge Cells
(D) Delete Sheet

100. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): You can hide columns containing sensitive data before printing an Excel report.
Reason (R): Hidden columns are automatically deleted when the file is saved.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

101. In MS Excel, what is the primary use of the 'Freeze Panes' feature?
(A) To prevent unauthorized users from editing contents in protected cell ranges
(B) To encrypt and lock the entire workbook file using a custom administrative password
(C) To keep key rows or columns visible while scrolling the worksheet
(D) To automatically restrict long text entries from overflowing beyond the cell border

102. If you click on 'Freeze Top Row' in the View tab, what happens?
(A) The first column (Column A) remains visible as you scroll right.
(B) Row 1 remains visible as you scroll down the worksheet.
(C) All rows above the active cell are frozen.
(D) The header and footer are locked for printing.

103. If you want to freeze both Row 1 and Column A simultaneously, which cell should you select before clicking 'Freeze Panes'?
(A) Cell A1
(B) Cell A2
(C) Cell B1
(D) Cell B2

104. Which of the following actions is NOT achieved by using Freeze Panes?
(A) Preventing users from typing data into the frozen cells
(B) Keeping row headers visible while scrolling down
(C) Keeping column headers visible while scrolling right
(D) Keeping both top rows and left columns visible simultaneously

105. Consider the following statements about Freeze Panes:
I. It is accessed from the View tab on the Ribbon.
II. You can unfreeze panes at any time to return the sheet to normal scrolling.
III. Freezing panes affects how the document looks when it is printed on paper.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II, and III

106. What is the primary concept of 'Data Validation' in MS Excel?
(A) Restricting the type or value of data entered into a cell
(B) Automatically running spelling and grammar checks across all worksheet text
(C) Comparing two separate workbook files to identify structural differences
(D) Formatting cell background colors automatically based on numerical values

107. Identify the correct statement regarding Data Validation.
(A) It is used to apply strong encryption passwords to protect the active workbook.
(B) It automatically translates stored text data into different selected languages.
(C) It parses and converts combined text strings into separate grid columns.
(D) It can create a drop-down list of allowed entries in a cell.

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21. When you format a cell to display numbers with two decimal places, what happens to the underlying exact value stored in that cell?
(A) The underlying value is permanently rounded off to two decimal places
(B) The underlying value is converted to text format
(C) The underlying value remains completely unchanged for calculations
(D) The underlying value is deleted if it exceeds two decimal places

22. Which feature allows you to display multiple lines of text within a single cell without changing the column width?
(A) Merge & Center
(B) Wrap Text
(C) Shrink to Fit
(D) Orientation

23. What is the primary difference between the Currency and Accounting number formats in MS Excel?
(A) Currency aligns symbols and decimals in a straight column, whereas Accounting places symbols adjacent to numbers
(B) Currency is used exclusively for financial reporting, whereas Accounting is used only for general text entry
(C) Currency allows the use of negative numbers, whereas Accounting automatically converts all numbers to positive
(D) Accounting aligns currency symbols and decimals in a column, whereas Currency places the symbol next to the number

24. Find the odd one out from the following cell formatting options.
(A) Format Painter
(B) Bold
(C) Italic
(D) Underline

25. Consider the following statements about cell formatting in MS Excel:
I. The Format Painter tool is used to copy formatting from one cell and apply it to another.
II. You can add borders to the top, bottom, left, or right of a cell.
III. The 'Merge & Center' option combines selected cells into one larger cell and centers the content.
IV. Once a cell is merged, it cannot be unmerged.
Which of the above statement(s) is/are correct?
(A) I, II, and IV
(B) II, III, and IV
(C) I, II, and III
(D) I, III, and IV

26. Which tab on the Excel Ribbon contains the primary options for font formatting, such as font size, color, and cell borders?
(A) Home Tab
(B) Insert Tab
(C) Page Layout Tab
(D) Data Tab

27. Which of the following is NOT a standard number format category available in the Format Cells dialog box?
(A) Fraction
(B) Percentage
(C) Date
(D) Hyperlink

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28. Identify the correct statement about applying the Percentage format to a cell containing the number 0.5.
(A) It will display as 0.5%
(B) It will display as 50%
(C) It will display as 5%
(D) It will display as 500%

29. A user wants to draw attention to specific cells by changing their background color. Which tool should they use?
(A) Font Color
(B) Format Painter
(C) Fill Color
(D) Line Color

30. What happens if a number entered into a cell is too long to be displayed within the current column width?
(A) Excel automatically deletes all extra digits exceeding width
(B) Excel displays a standard error message reading #VALUE!
(C) Excel automatically hides the column containing the number
(D) Excel displays a series of hash/pound signs (####)

31. In MS Excel, every mathematical formula must begin with which of the following characters?
(A) = (Equal to)
(B) + (Plus)
(C) @ (At symbol)

118. Which keyboard shortcut is used to open the Print dialog and Print Preview screen in MS Excel?
(A) Ctrl + PrtScn
(B) Ctrl + P
(C) Alt + P
(D) Shift + P

119. If a spreadsheet is slightly too wide to fit on a single printed page, which Page Setup feature should you use to make it fit?
(A) Merge & Center
(B) Freeze Panes
(C) Wrap Text
(D) Scale to Fit (Fit to 1 page wide)

120. Match the file formats in List I with their standard descriptions in List II.
List I: (File Formats)
P. XLSX
Q. CSV
R. PDF
S. TXT
List II: (Descriptions)
1. Portable Document Format; hard to edit, good for sharing layouts
2. Default workbook format for modern versions of MS Excel
3. Plain text file with unformatted data
4. Comma Separated Values; stores tabular data in plain text
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-1, R-4, S-3
(D) P-1, Q-2, R-3, S-4

121. What is the default file extension for saving a workbook in modern versions of MS Excel (2007 and later)?
(A) .xls
(B) .xlsm
(C) .xlsx
(D) .xlt

122. When you save an Excel file in CSV format, how is the data in different columns separated in the raw file?
(A) By a comma
(B) By a space
(C) By a tab
(D) By a semicolon

123. Why might a user choose to save an Excel spreadsheet as a CSV file?
(A) To preserve advanced embedded charts, macro scripts, and complex conditional formatting
(B) To apply strong file-level encryption and password protection to the dataset
(C) To intentionally restrict and reduce the maximum number of rows permitted in the sheet
(D) To export plain tabular data for compatibility with other software systems

124. Which of the following is NOT a valid format available in the "Save As" dialog box in MS Excel?
(A) Excel Macro-Enabled Workbook (*.xlsm)
(B) Executable Application (*.exe)
(C) Portable Document Format (*.pdf)
(D) Web Page (*.htm, *.html)

125. Consider the following statements about saving and printing in Excel:
I. Saving as a PDF ensures the document looks the same on most devices.
II. A CSV file supports saving multiple worksheets in a single file.
III. You can print column letters and row numbers if you enable 'Print Headings'.
IV. The default page orientation for printing is Portrait.
Which of the above statement(s) is/are correct?
(A) I, II, and III
(B) I, III, and IV
(C) II, III, and IV
(D) I, II, and IV

126. Which keyboard shortcut is used to copy the contents of a selected cell in MS Excel?
(A) Ctrl + V
(B) Ctrl + X
(C) Ctrl + Z
(D) Ctrl + C

127. If you accidentally delete a formula in an Excel cell, which keyboard shortcut can you use to undo the action immediately?
(A) Ctrl + Z
(B) Ctrl + Y
(C) Ctrl + U
(D) Esc

128. Identify the correct statement regarding the 'Save' and 'Save As' commands.
(A) 'Save' always prompts for a new location, whereas 'Save As' silently overwrites the

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open file.
(B) 'Save' updates the file; 'Save As' creates a copy with a new name or format.
(C) There is no operational distinction whatsoever between these two commands in Excel.
(D) 'Save As' prepares the file for printing, whereas 'Save' commits changes to the drive.

129. Which function key is the standard shortcut to edit the contents of the active cell without clicking in the formula bar?
(A) F1
(B) F2
(C) F4
(D) F5

130. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): When you save an extensively formatted Excel report (with colors, bold fonts, and charts) as a CSV file, all formatting is lost.
Reason (R): The CSV format only stores plain text and numerical data separated by commas.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

131. Which keyboard shortcut is used to quickly save the current Excel workbook?
(A) Ctrl + O
(B) Ctrl + N
(C) Ctrl + S
(D) Alt + S

132. What happens when you select a block of data and press the F11 key in Excel?
(A) It opens the standard file 'Save As' configuration dialog box
(B) It immediately inserts a new blank column into the active worksheet
(C) It displays the full 'Format Cells' dialog box for customization
(D) It creates a default chart of the data on a new worksheet

133. Find the odd one out among these common keyboard shortcuts used in MS Excel.
(A) Ctrl + B
(B) Ctrl + I
(C) Ctrl + M
(D) Ctrl + U

134. In MS Excel terminology, what does the term 'Active Cell' mean?
(A) A cell that contains a formula rather than static text
(B) The currently selected cell where data will be entered
(C) A cell that is linked to an external database
(D) A cell that has conditional formatting applied

135. Consider the following statements about keyboard shortcuts in MS Excel:
I. Ctrl + X cuts the selected cells.
II. Ctrl + V pastes the cut or copied cells.
III. Ctrl + A selects the entire worksheet.
Which of the above statement(s) is/are correct?
(A) Only I and II
(B) Only II and III
(C) Only I and III
(D) I, II, and III

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136. Which of the following keyboard shortcuts is NOT typically used for navigation within an Excel worksheet?
(A) Ctrl + P
(B) Page Down
(C) Ctrl + Home
(D) Tab

137. Identify the incorrect statement regarding keyboard shortcuts in MS Excel.
(A) Pressing 'Enter' confirms data entry and moves down one cell.
(B) Pressing 'Shift + Enter' confirms data entry and moves up one cell.
(C) Pressing 'Ctrl + A' deletes all data in the worksheet.
(D) Pressing 'Esc' cancels the current data entry or cell edit.

138. Which of the following is a primary reason MS Excel is heavily used in office and statistical work?
(A) It efficiently processes large datasets, performs calculations, and visualizes data.
(B) It provides comprehensive image manipulation tools and advanced raster photo editing capabilities.
(C) It serves as a full-featured standalone operating system designed for business office computers.

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(D) It acts as a dedicated and secure web browser interface for navigating the global internet safely.

139. A statistical clerk needs to enter serial numbers from 1 to 1000 in a column. What is the most appropriate and time-saving method?
(A) Type every serial number manually in order from cell 1 through cell 1000
(B) Copy the first cell containing 1 and repeatedly paste it 1000 times down
(C) Use the Data Validation configuration tool to auto-generate the numerical series
(D) Enter 1 and 2, select both, and drag the Fill Handle down

140. When you copy a formula containing relative references down a column using the Fill Handle, what does Excel automatically do?
(A) Excel converts all references to absolute references.
(B) Excel adjusts the row numbers in the formula to reflect the new row.
(C) Excel changes the mathematical operators in the formula.
(D) Excel keeps the formula exactly the same without adjusting references.

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ANSWERS

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1. (B) A spreadsheet application used for data analysis and calculations
Microsoft Excel is a powerful computer application created by Microsoft that organizes, manipulates, and analyzes numeric and text data using a structured table layout. The software allows users to build dynamic spreadsheets, execute basic and complex mathematical operations, analyze statistics, create visual charts, and manage information efficiently across various professional and personal applications.

2. (A) A workbook is a single file that can contain multiple worksheets
In electronic spreadsheet software, a workbook serves as the primary master document or complete file saved on a storage device. Within this file, individual pages or tabs called worksheets exist to hold data grids. Therefore, a single workbook functions as an umbrella file container capable of holding one or many distinct worksheets simultaneously.

3. (C) A cell
Spreadsheet documents organize information within a two-dimensional grid composed of horizontal rows and vertical columns. The exact point where a specific horizontal row meets a vertical column creates an individual rectangular block designated as a cell. Cells act as the fundamental storage units for entering text values, numerical data, dates, or complex formulas.

4. (D) Columns are identified by letters and rows are identified by numbers
Grid navigation relies on a standard coordinate labeling system to distinguish structural components clearly. Vertical columns are identified using alphabetical letters starting from A onwards, while horizontal rows are labeled using sequential numbers beginning at 1. Combining a column letter with a row number forms a unique coordinate address for every individual cell.

5. (C) 12B
Standard cell address nomenclature requires the column identifier to precede the row number without exception. Alphabetic letter codes specify vertical columns, while numeric digits specify horizontal rows. Placing digits before letters violates standard cell naming rules, making addresses with leading numbers completely invalid within spreadsheet interface software and standard calculation engines.

6. (B) Comma Separated Values
Comma Separated Values represents a universal plain text file format used widely for exporting, importing, and exchanging structured tabular data between diverse software applications. Information stored in this format uses plain text, where lines correspond to rows and individual fields or data cells within each row are demarcated by commas.

7. (D) The cell is the active cell
When navigating a worksheet grid, clicking on any cell selects it and outlines its perimeter with a prominent dark outline. This highlighted selection signifies the active cell, which is the precise location ready to accept keyboard input, edits, or formatting changes. The active cell reference also simultaneously displays inside the interface name box.

8. (A) MS Word
Word processing software functions primarily to compose, edit, format, and print textual documents such as letters, reports, and books. In contrast, spreadsheet programs focus specifically on organizing tabular data in grids, performing mathematical calculations, and generating data visualizations. Software dedicated to document processing lacks native grid-based numerical calculation structures.

9. (C) By default, text is left-aligned and numbers are right-aligned in a cell
Standard data alignment rules assist users in identifying entry types automatically without manual adjustments. Entering text strings aligns the content along the left boundary of a cell by default, whereas entering numerical values automatically aligns content along the right boundary. This visual distinction ensures

quick identification of numeric data used for mathematical evaluation.

10. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Spreadsheet tools are essential in professional financial and statistical environments because they simplify numerical tasks. The vast library of built-in computational functions, flexible sorting capabilities, dynamic data modeling, and automated visual chart creation directly enable efficient data processing. Consequently, these robust mathematical features provide the fundamental reason for widespread organizational adoption.

11. (D) Formula Bar
The formula bar is a crucial interface element positioned directly above the main worksheet grid. It displays the precise text string, underlying formula, or numerical value entered inside the currently selected active cell. Users frequently utilize this input line to review complex calculations, edit formula syntax, or enter long text strings cleanly.

12. (B) The cursor moves to the cell immediately below
Keyboard navigation standards facilitate rapid data entry into grid-based tables. Pressing the Enter key upon completing an entry confirms the typed input within the active cell and automatically shifts the active cell focus down to the immediate next row. This default movement allows users to quickly enter list items vertically without manual positioning.

13. (C) It displays the cell reference or name of the active cell
The Name Box is an essential user interface component located to the left of the formula bar. It continuously indicates the exact cell coordinate address or defined range name of the currently selected active cell. Beyond displaying location coordinates, users can type specific cell references into the box to navigate instantly across large worksheets.

14. (D) Fill Handle
The Fill Handle is a small solid square appearing at the bottom-right corner of the active cell border. Dragging this handle across adjacent rows or columns automatically copies cell contents or populates recognized data sequences, such as consecutive dates, months, or numbers, eliminating tedious repetitive manual typing across spreadsheet rows and columns.

15. (D) I, II, and III
Modern spreadsheet applications feature structured user interfaces designed for usability. Opening a new workbook provides a default worksheet ready for data entry. User controls like the zoom slider are conveniently situated on the status bar at the bottom, while major operational commands are grouped into organized tabbed toolbars across the top ribbon interface.

16. (B) Sheet1
When a new workbook is created, the system automatically assigns standardized sequential naming conventions to generated worksheets. The initial default sheet tab is assigned the label Sheet1. Subsequent worksheets added to the same workbook automatically follow this sequential pattern, taking names such as Sheet2 and Sheet3 until manually renamed by the user.

17. (B) Hardware driver settings
Spreadsheet cells are designed to store user data including text labels, numerical values, dates, times, logical statements, and mathematical formulas. System-level configurations like hardware driver settings belong to system operating software and computer device managers; they cannot be directly embedded or processed as native data items inside standard worksheet cells.

18. (A) You cannot apply background colors to individual cells.
Spreadsheet software provides extensive formatting capabilities to customize visual presentations. Users can easily change font attributes, modify text orientation, apply customized borders around cell boundaries, and alter background fill colors for individual cells or selected ranges. Claiming that background colors cannot be applied contradicts basic custom cell formatting options available in the software.

19. (C) The '+' (plus) icon next to the existing sheet tabs
Managing multiple sheets within a single workbook file is made simple through interface shortcuts. Positioned alongside the existing sheet tabs at the bottom of the worksheet display area, a dedicated plus icon allows users to insert a

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indicating that every cell located between the starting reference and ending reference must be included in the operation. Consequently, referencing a range with a colon sums all contiguous values within those boundaries accurately.

41. (C) SUM()
The SUM function is the fundamental built-in calculation tool designed to add all numerical values across specified individual cells or cell ranges. By referencing ranges within parentheses, it eliminates the cumbersome task of manually inserting addition operators between every individual cell reference, enabling quick summation of massive numerical datasets.

42. (A) It calculates the arithmetic mean of a range of cells
The AVERAGE function computes the statistical arithmetic mean for a specified group of numbers. It automatically calculates the total sum of all numerical values contained within designated cell references and divides that sum by the total count of cells containing numeric values, ignoring blank cells and text entries during calculation.

43. (D) 5
Calculating an arithmetic mean requires summing all supplied numerical values and dividing that sum by the total count of those values. Summing two, four, six, and eight yields a total sum of twenty. Dividing twenty by the count of four values results in an average arithmetic calculated output of five.

44. (B) =MAX(A1:A10)
The MAX function is the standard predefined built-in formula used to evaluate a range of values and return the highest numerical value present. Utilizing correct function syntax with an equal sign followed by MAX and the desired cell range enclosed in parentheses accurately identifies the maximum number within that set.

45. (B) Only I and III
The MIN function locates the lowest numerical value in a dataset, while the SUM function flexibly accepts ranges and discrete values. However, the standard COUNT function evaluates only cells containing numeric data; it intentionally ignores empty cells and text strings, making statements asserting that COUNT includes empty cells inaccurate.

46. (D) AVG
Predefined formula functions rely on strictly established reserved names. While functions like MIN, COUNT, and AVERAGE are standard built-in functions recognized by calculation engines, shorthand abbreviations like AVG are invalid function names and will generate a recognizable name error if entered into a cell as a formula.

47. (A) It counts only those cells that contain numbers.
The COUNT function is specifically designed to tallies the total number of cells within a specified range that contain numerical values, including dates and times. Cells containing plain text labels, error messages, or blank spaces are automatically omitted from the final tally returned by this statistical calculation tool.

48. (B) 2
Evaluating a cell range using the COUNT function tallies only cells holding numeric values. In a range containing two numerical entries and one text string, the calculation engine identifies the two numeric cells while skipping the text entry entirely, returning a total counted result of two for the specified range.

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49. (B) 15
Nested function calculations evaluate inner expressions prior to outer functions. The inner MIN function compares twenty and ten, returning ten as the lowest value. Next, the outer MAX function compares five, fifteen, and the returned value of ten, identifying fifteen as the highest number and outputting fifteen as the final calculated result.

50. (A) P-4, Q-3, R-1, S-2
The SUM function adds numerical values together within a specified range. The MAX function identifies and returns the highest numerical value present. The MIN function determines and outputs the lowest value across selected cells. The COUNT function counts only those cells within a specified cell range that hold numerical data.

51. (C) Return one value if a logical condition is TRUE and another if it is FALSE
The IF function provides essential decision-making capabilities within spreadsheet models by performing conditional tests. It evaluates

column, the application prevents truncated or misleading display numbers by filling the cell width with hash signs. Expanding the column width or reducing the font size immediately displays the complete numeric value without altering data.

31. (A) = (Equal to)
The equal sign serves as the mandatory indicator to signal that cell input must be treated as a mathematical formula rather than plain text or numbers. Typing an equal sign first instructs the calculation engine to evaluate subsequent characters, cell references, and operators to compute and display a dynamic result.

32. (B) *
In computer spreadsheet applications, standard mathematical operators represent basic arithmetic calculations. Multiplication operations strictly utilize the asterisk character as their functional operator symbol. Using other characters such as the letter 'x' causes syntax errors because the calculation engine interprets letters as text characters or named range references instead of operators.

33. (B) Excel follows the standard mathematical order of operations
Formula calculation engines rigorously follow standard mathematical order rules, commonly known as BODMAS or PEMDAS. In arithmetic expressions lacking parentheses, multiplication and division precedence naturally supercedes addition and subtraction. Therefore, the multiplication part is calculated first to produce twelve, which is then added to two to yield a final result of fourteen.

34. (A) \
Standard arithmetic operators in spreadsheets include the forward slash for division, asterisk for multiplication, plus sign for addition, minus sign for subtraction, and caret for exponentiation. The backslash symbol is not a valid mathematical operator within formula expressions and causes a syntax error if entered as an arithmetic function operator.

35. (B) Exponentiation, Multiplication, Addition
Formula evaluation strictly adheres to standardized operational precedence. Exponentiation using the caret symbol possesses the highest priority and is computed first. Next, multiplication using the asterisk operator is performed on the resulting value. Finally, addition is executed last. Therefore, the correct calculation hierarchy proceeds sequentially through exponentiation, multiplication, and addition.

36. (D) 2
The forward slash operator performs division between numerical values or referenced cell values. In a formula referencing two cells, the calculation divides the numeric value stored in the first referenced cell by the numeric value in the second. Dividing ten by five evaluates directly to a calculated mathematical result of two.

37. (C) A formula can only contain numbers, not cell references.
Dynamic spreadsheet modeling relies heavily on referencing cell locations within mathematical expressions. Formulas regularly incorporate cell addresses, constant numbers, built-in functions, and operational operators. Stating that formulas are restricted solely to numbers is incorrect, as using cell references allows formulas to update automatically whenever underlying cell inputs are changed.

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38. (B) Exponentiation (Power)
The caret symbol functions specifically as the exponentiation operator in spreadsheet formula expressions. It instructs the calculation engine to raise the numerical base value preceding the symbol to the power of the exponent value following it, allowing users to calculate exponential growth, squares, cubes, and roots efficiently in calculations.

39. (D) : (Colon)
The plus, minus, and asterisk symbols are direct arithmetic operators used to perform addition, subtraction, and multiplication calculations respectively. In contrast, the colon functions as a range reference operator used to define a continuous block of cells between two anchor coordinates, making it structurally distinct from standard arithmetic computational operators.

40. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Using range syntax significantly simplifies formula creation across multiple cells. The colon character acts as a continuous range operator,

location, such as a interest rate or tax multiplier. Locking the target cell coordinate prevents unwanted reference shifting when replicating formulas across rows or columns.

63. (A) =$A$1+B2
Copying formulas containing mixed reference types demonstrates how locking works. The absolute cell reference remains completely unchanged during copying due to double dollar signs, while the relative reference automatically increments its row number by one to match the relative downward movement, producing the updated cell reference combination.

64. (B) F5
Absolute cell references contain dollar signs before both column letters and row numbers to lock their location completely when copied. Three of the given cell coordinates feature full absolute referencing syntax with dual dollar signs, while the remaining coordinate lacks dollar signs entirely, making it a purely relative cell reference.

65. (A) II, I, III, IV
Replicating a formula efficiently requires selecting the target cell containing the original formula first. Next, click and hold the Fill Handle located at the bottom-right corner of the cell boundary. Then, drag the cursor across the intended destination range, and finally release the mouse button to execute the copy action.

66. (A) A formula cannot combine absolute and relative references together.
Formulas frequently combine relative and absolute cell references within a single calculation statement to achieve accurate modeling behavior. Stating that absolute and relative references cannot be used together is false; combining both reference types allows constant factors to interact with dynamic row values across copied formulas within data tables.

67. (C) Sorting
Sorting is the process of arranging data records systematically based on specific criteria. Organizing rows in alphabetical order from A to Z, numerical order from lowest to highest, or chronological date sequences reorders information logically, helping users analyze structured datasets, locate items quickly, and maintain readable report layouts.

68. (D) Descending
Text sorting ordering is categorized as either ascending or descending. Ascending order arranges text alphabetically from A to Z or numbers from smallest to largest. Conversely, descending order arranges textual data in reverse alphabetical order from Z to A or numbers from highest to lowest, placing later alphabetical entries first.

69. (C) Custom Sort (Multiple Levels)
Multilevel sorting is required when organizing data by primary and secondary criteria. Using the Custom Sort feature allows users to add multiple sorting rules sequentially, ensuring that the dataset is organized first by a primary column, and then sorted by a secondary column within matching primary groups without breaking records.

70. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
When sorting multi-column tabular data, selecting all related columns ensures that entire data rows move together as unified records. Sorting only a single column within a data grid reorganizes that column while leaving adjacent columns unchanged, severely corrupting data integrity by mismatching primary items from their associated information.

71. (D) To temporarily hide rows that do not meet specified criteria
Filtering is a powerful data management feature designed to temporarily conceal rows that do not satisfy user-defined search criteria. Unlike deletion operations, filtering leaves hidden data completely intact in memory, enabling users to focus exclusively on relevant subsets of information without permanently altering or removing existing worksheet records.

72. (A) A drop-down arrow
Enabling the Filter tool on a structured dataset automatically places a prominent drop-down arrow icon inside each column header cell. Clicking this drop-down arrow opens an interactive control menu containing sorting options, text or number criteria controls, selection checkboxes, and color filter tools for that column.

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a specified logical expression and returns a designated primary result if the comparison evaluates to true, or returns an alternative secondary result if the comparison evaluates to false, enabling conditional dynamic outputs.

52. (C) Three
The standard construction of the logical IF function requires exactly three fundamental arguments separated by commas. The first argument specifies the logical comparison test, the second argument defines the output delivered when the test evaluates to true, and the third argument establishes the output provided when the test evaluates to false.

53. (C) Fail
Evaluating conditional logic relies on comparing mathematical quantities. Testing whether ten is greater than twenty returns a logical output of false. Because the condition evaluates to false, the IF function bypasses the second argument designated for true conditions and returns the third argument, resulting in the text output Fail.

54. (B) &
Logical test conditions utilize comparison operators such as greater than, less than, and equal to to compare numerical or text values. The ampersand symbol serves as a text concatenation operator designed to join multiple string values together, making it structurally distinct from standard binary relational logical comparison operators.

55. (C) I, II, and III
The IF function uses a logical test as its initial argument, returns a specified value if true, and requires double quotes around returned literal text strings. However, nested IF functions are fully supported, allowing users to place one IF function inside another to evaluate multiple sequential conditional conditions successfully.

56. (A) It adjusts automatically when copied based on relative position
Relative cell references form the default address format in formula design. When a formula containing relative references is copied and pasted across different rows or columns, the cell coordinates automatically adjust relative to the new formula location, maintaining proportional spatial relationships between the formula and its source data cells.

57. (C) $
The dollar sign serves as the mandatory reference locking operator in spreadsheet syntax. Placing a dollar sign directly before a column letter, a row number, or both transforms a flexible relative cell coordinate into a fixed absolute reference, preventing automatic coordinate adjustments when formulas are copied across different grid cells.

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58. (A) It locks the row and column addresses when copied to other cells.
Absolute cell referencing locks specific coordinates within a formula. Inserting dollar signs before both the column letter and row number fixes the address completely, ensuring that copying the formula to any other location on the worksheet consistently points to that exact cell without adjusting row or column reference positions.

59. (D) =A2+10
Relative cell references adjust automatically based on destination movement. When a formula referencing a cell directly to its left is copied down by one row, the row index of the referenced cell increments by one to reflect the relative offset, updating the copied formula to reference the new adjacent cell.

60. (B) Active Reference
Standard cell referencing models recognize relative references, absolute references, and mixed references based on dollar sign placement. Active Reference is not a recognized cell reference classification in spreadsheet architecture; the term active cell merely describes the currently selected interface cell rather than a type of mathematical reference.

61. (C) A$1
A mixed cell reference locks either the column letter or the row number while leaving the other coordinate relative. Placing a dollar sign exclusively before the row number keeps the row reference fixed during vertical copying while allowing the column letter to adjust relative to horizontal movement across worksheet columns.

62. (D) When you need a copied formula to consistently reference a single fixed cell, such as a tax rate
Absolute references are essential when multiple formulas across a table must evaluate data against a single constant value stored in a specific

new blank worksheet instantly with a single click, streamlining document expansion and data organization.

20. (A) P-4, Q-3, R-1, S-2
A workbook represents an entire spreadsheet file that holds multiple pages. A worksheet is an individual grid page containing rows and columns. A cell is the precise intersection point of a row and column. The Name Box displays the specific coordinate address of the currently selected active cell within the interface.

21. (C) The underlying value remains completely unchanged for calculations
Applying custom display formatting alters only the visual presentation of data on screen or printouts without altering the true underlying numerical value. Even if a number is formatted to display two decimal places, the underlying full-precision value is preserved in memory and utilized for all mathematical computations and formula evaluations.

22. (B) Wrap Text
When textual content exceeds the visible boundary of a single cell, enabling the Wrap Text feature forces the text to break into multiple lines within that same cell. This automatic adjustment increases the cell height while leaving the column width unchanged, ensuring all text remains visible without expanding grid columns.

23. (D) Accounting aligns currency symbols and decimals in a column, whereas Currency places the symbol next to the number
Financial formatting options offer distinct aesthetic arrangements for numerical reporting. The Accounting format aligns currency symbols along the extreme left edge of the cell and decimal points in a clean vertical column. Conversely, the Currency format places the monetary symbol directly adjacent to the leftmost digit of the number being formatted.

24. (A) Format Painter
Bold, Italic, and Underline are specific typographical style options used to modify text appearances within cells. In contrast, the Format Painter is an operational tool designed to copy existing formatting styles from one selection and apply them to another. The tool itself is an utility rather than a direct font formatting style.

25. (C) I, II, and III
Cell formatting features greatly enhance sheet readability. The Format Painter efficiently copies cell styles, custom borders highlight specific boundaries, and Merge & Center combines selected cells while centering text. Merged cells are fully reversible, meaning users can unmerge them at any time to restore the original individual structural cells cleanly.

26. (A) Home Tab
The Home tab serves as the primary hub for essential formatting and editing commands in spreadsheet applications. It houses dedicated groups for font modifications, alignment controls, number formatting, border styling, background fills, and cell insertion or deletion, providing quick access to tools required for standard document styling and arrangement.

27. (D) Hyperlink
The Format Cells dialog box includes standardized categories such as General, Number, Currency, Accounting, Date, Time, Percentage, Fraction, Scientific, Text, and Special. Hyperlinks represent clickable navigation paths rather than numerical or textual data formats, and are inserted via separate commands rather than number formatting category selections inside cell format menus.

28. (B) It will display as 50%
Applying percentage formatting multiplies the underlying numerical value in a cell by one hundred and attaches a percent symbol to the end. Consequently, entering a decimal value of 0.5 and formatting it as a percentage converts the value mathematically to fifty percent, displaying 50% cleanly on the worksheet display grid.

29. (C) Fill Color
The Fill Color tool allows users to apply custom background colors to selected cells, rows, or columns. Changing background fill colors provides a highly effective visual method for highlighting key metrics, categorizing tabular information, creating distinct header rows, and drawing immediate attention to critical data values within large spreadsheets.

30. (D) Excel displays a series of hash/pound signs (####)
When a formatted numerical value or date string exceeds the horizontal space available within its

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73. (C) The data is permanently deleted from the hard drive
Filtering alters row visibility to display desired data matching specific conditions while hiding non-matching rows. Row numbers adapt visually to indicate active filtering, and criteria can utilize numbers, text, or colors. Filtering never deletes cell contents or underlying files, preserving all records safely when filters are cleared.

74. (A) 'Text Filters' allow options like 'Contains' or 'Begins With'.
Text filtering options provide powerful search rules tailored specifically for textual data columns, including criteria like contains, equals, begins with, and ends with. Users can apply filtering across multiple columns simultaneously, and filtering merely hides non-matching rows temporarily without altering row order or deleting underlying cell data.

75. (A) Only I and II
Sorting reorganizes physical row order based on specified values, whereas filtering temporarily hides rows that fail to match criteria. Both operations work together seamlessly on the same dataset, allowing users to apply filters and sort columns simultaneously to analyze targeted data subsets organized in specific logical orders.

76. (B) Click on 'Clear' in the Sort & Filter group on the Data tab
To restore hidden rows and display the complete dataset after applying filtering criteria, users should utilize the Clear option situated within the Sort & Filter group on the Data tab. This action instantly resets all active column filters without deleting header controls or modifying saved worksheet contents.

77. (C) Format Painter
Sort, Filter, and Data Validation are functional data management tools situated on the Data tab, designed to manipulate, organize, and restrict underlying data entries. The Format Painter is an aesthetic formatting utility located on the Home tab, dedicated solely to copying visual styling attributes between different cell selections.

78. (D) Rows with marks less than or equal to 50 will be hidden.
Applying a numeric condition filter of greater than fifty evaluates every cell within the targeted column against that threshold. Rows containing values exceeding fifty remain visible on the display grid, whereas rows containing numbers less than or equal to fifty fail the condition and are temporarily hidden from view.

79. (A) To represent data visually for easier analysis and comparison
Charts and graphs transform raw numerical data grids into clear graphical representations. Visualizing data through charts allows users to identify underlying trends, analyze complex statistical relationships, compare categories easily, and communicate analytical insights effectively, making graphic visualization a central feature of spreadsheet data analysis and reporting.

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80. (A) P-2, Q-4, R-1, S-3
Line charts effectively display numerical trends over continuous time intervals. Pie charts illustrate proportional percentage contributions of parts relative to a whole dataset. Column charts utilize vertical bars to compare discrete categorical values. Scatter charts plot pairs of numerical coordinates to reveal correlations and distribution patterns.

81. (B) Pie Chart
A Pie Chart excels at displaying proportional distributions and percentage splits of a single categorical dataset that sums to a whole. Representing market share percentages across different brands using a circular chart clearly displays each brand's relative slice size, making proportional visual comparisons intuitive and immediate for viewers.

82. (A) Line Chart
Line charts connect individual data points using continuous line segments, making them the premier visual tool for plotting continuous data trends over uniform time intervals. They are widely utilized to track operational metrics such as sales growth, temperature variations, or stock prices across sequential daily, monthly, or yearly periods.

83. (C) Column charts use vertical bars, while Bar charts use horizontal bars
Column charts and Bar charts present data using rectangular blocks, but differ fundamentally in orientation. A Column chart displays data series using vertical rectangles extending upward

from the horizontal axis, whereas a Bar chart plots data using horizontal rectangles extending rightward from the vertical axis, aiding long text labels.

84. (D) Table Chart
Standard spreadsheet charting engines include diverse visual chart categories such as Pie, Bar, Line, Column, Area, Scatter, and Radar charts. Table Chart is not a valid recognized chart type; tables represent raw grid layouts containing rows and columns rather than graphical chart elements generated by visualization engines.

85. (A) I, II, and III
Charts dynamically link to source cell values, updating automatically when data changes, and allow title additions alongside chart type modifications. However, pie charts are strictly designed to display a single data series; attempting to plot multiple data series on a pie chart produces confusing and inaccurate visual representations.

86. (B) Legend
A chart legend is an essential explanatory graphic element that decodes the visual elements plotted within a graph. It displays small color blocks, shaded swatches, or line patterns paired with corresponding series names, enabling viewers to quickly identify which specific data series each colored bar, pie slice, or line represents.

87. (D) Data Labels display exact numerical values directly on chart elements.
Data Labels are visual chart elements that print exact data values directly alongside or inside individual data bars, pie slices, or line plot points. This direct labeling enhances readability by allowing users to read exact numbers without tracing axes or cross-referencing underlying data source tables manually.

88. (A) Create a default chart on a new chart sheet
Keyboard shortcuts accelerate chart creation from active data selections. Selecting a table of data and pressing the F11 function key automatically generates a standalone default column chart placed on a newly created dedicated chart sheet, allowing instant visualization of data without opening manual chart wizard menus.

89. (C) A row or column of numbers plotted on a chart
A Data Series refers to a contiguous collection of related data points, sourced from a single row or column of numerical values in a worksheet, that is plotted visually onto a chart. Each series is distinguished on the graph using unique colors, bar patterns, or line styles for clear identification.

90. (A) Formula Bar
Chart Area, Legend, and Axis Titles represent internal structural elements that make up graphical charts. In contrast, the Formula Bar is a permanent application user interface control situated above the worksheet grid, dedicated to displaying and editing cell contents rather than functioning as a component inside generated chart objects.

91. (B) Above the selected row
Inserting a new row into an active worksheet shifts existing contents down to accommodate the addition. When executing a row insertion command, the application automatically places the newly created blank row directly above the currently selected row, renumbering subsequent rows downward while preserving existing relative cell coordinates.

92. (A) To the left of the selected column
Column insertion behavior follows consistent layout rules across spreadsheet applications. Executing a column insertion command inserts a new blank column directly to the left of the currently selected column, shifting the active column and all subsequent columns rightward while automatically reassigning column letter headers across the entire sheet grid.

93. (C) Deleting permanently removes data, while hiding temporarily conceals it
Deleting a row permanently purges its structure and cell contents from the worksheet, shifting lower rows upward to fill the void. Conversely, hiding a row conceals it visually from the display screen while retaining its data in memory, allowing hidden values to remain accessible for formulas, calculations, and unhiding later.

94. (D) When merging multiple cells with data, only the top-left value is kept.
Merging joins adjacent cells into a unified cell, routinely utilized for centering table headings across columns. Merged ranges can be split back

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into individual grid cells at any time. When combining multiple filled cells, the application retains exclusively the top-left value, discarding all remaining cell contents within the merged boundary.

95. (A) Right-click the sheet tab → Select 'Delete'
Deleting an unwanted worksheet is efficiently executed using context menus. Right-clicking the specific worksheet tab located at the bottom of the workbook window opens a shortcut menu. Selecting the Delete option from this context menu permanently removes the chosen worksheet along with all its contained data from the active workbook.

96. (B) Hello
Executing a Merge & Center command across multiple cells holding data triggers a standard warning regarding content retention. The application retains exclusively the data value residing in the upper-leftmost cell of the selected range while discarding all other values, resulting in a merged cell displaying only the initial left cell content.

97. (B) Double-click the worksheet tab and type the new name
Renaming worksheet tabs organizes workbooks effectively. A rapid method to rename a sheet involves double-clicking directly on its sheet tab at the bottom of the screen. This action highlights the existing tab name, allowing users to type a descriptive new name immediately and press Enter to confirm the change.

98. (A) A deleted worksheet cannot be restored using Undo (Ctrl+Z).
Deleting a worksheet is a permanent action with critical data safety implications. Unlike standard cell edits or formatting changes, removing a sheet bypasses the edit history buffer, meaning the operation cannot be reversed using the standard Undo command or keyboard shortcut. Users must exercise caution before confirming sheet deletion requests.

99. (C) Merge Cells
Renaming sheets, inserting sheets, and deleting sheets are macro-level operations that manage entire worksheet tabs within a workbook file structure. In contrast, merging cells is a micro-level cell formatting action performed on individual grid cells within a specific sheet, making it conceptually distinct from sheet management operations.

100. (C) Assertion (A) is true but Reason (R) is false.
Hiding columns is a practical technique for concealing confidential or redundant information when presenting or printing spreadsheet reports. However, hiding columns merely suppresses their visual display on screen and paper printouts; it does not delete column structures or underlying data, which remain fully saved within the workbook file.

101. (C) To keep key rows or columns visible while scrolling the worksheet
The Freeze Panes feature solves navigation challenges when working with extensive datasets. Freezing selected top rows or leftmost columns locks them in place on screen, ensuring key table headers remain constantly visible during scrolling, which eliminates confusion when reading data entries situated far down or across large sheets.

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102. (B) Row 1 remains visible as you scroll down the worksheet.
Selecting the Freeze Top Row option locks the first horizontal row of the active worksheet into a fixed display position. As users scroll vertically down through hundreds of data records, Row 1 remains pinned at the top edge of the screen, preserving visible column header labels continuously during grid navigation.

103. (D) Cell B2
The Freeze Panes command locks all rows situated above the active cell selection and all columns located to its left. To freeze Row 1 and Column A simultaneously, selecting cell B2 establishes the required intersection point, locking the first row above it and the first column to its left cleanly.

104. (A) Preventing users from typing data into the frozen cells
Freeze Panes is strictly a visual navigation tool designed to lock header rows and columns on screen during scrolling. It provides no security or editing restrictions; users retain full ability to click, edit, format, or input new data into cells located within frozen panes unless worksheet protection features are applied.

126. (D) Ctrl + C
The Ctrl + C key combination is the standard keyboard shortcut used to copy selected content to the system clipboard. In spreadsheet applications, applying this shortcut places a moving marquee around selected cells, allowing their data, formulas, and formatting to be replicated elsewhere using paste operations.

127. (A) Ctrl + Z
Accidentally deleting data, overwriting formulas, or applying unwanted formatting changes can be reversed instantly using the universal Undo action. Pressing the keyboard shortcut Ctrl + Z reverses the most recent action, restoring deleted cell contents and formula entries back to their immediate previous state without data loss.

128. (B) 'Save' updates the file; 'Save As' creates a copy with a new name or format.
The Save command updates the active file on disk by overwriting it with current edits, retaining the existing filename, location, and format. In contrast, the Save As command prompts users to choose a new file name, storage directory, or file extension, creating a separate duplicate document copy cleanly.

129. (B) F2
Pressing the F2 function key instantly puts the currently active cell into direct edit mode. This shortcut places an active text cursor directly inside the selected cell, allowing users to make precise edits, add text, or modify existing formulas without having to manually click inside the formula bar interface.

130. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
CSV files store raw tabular data using plain text lines where fields are separated exclusively by commas. Because the format contains no structural code to support visual styling, saving formatted workbooks as CSV strips away cell fill colors, custom fonts, borders, and embedded charts, leaving only unformatted text and numbers.

131. (C) Ctrl + S
Regularly saving work is essential to prevent data loss from system interruptions. The key combination Ctrl + S acts as the primary keyboard shortcut to save the active workbook. Pressing this shortcut instantly commits recent edits to the existing file on disk, safeguarding user updates efficiently during spreadsheet editing.

132. (D) It creates a default chart of the data on a new worksheet
Selecting a range of numerical data and pressing the F11 function key acts as an instant chart generation shortcut. The application automatically processes the selected data series and inserts a default chart onto a newly created dedicated chart tab, streamlining visual presentation without opening manual insert menus.

133. (C) Ctrl + M
Ctrl + B, Ctrl + I, and Ctrl + U are standard typographical shortcut combinations used to apply Bold, Italic, and Underline formatting to cell contents. In contrast, Ctrl + M does not perform font styling functions, making it distinct from standard text formatting keyboard shortcuts used across office software applications.

134. (B) The currently selected cell where data will be entered
In spreadsheet interfaces, the Active Cell refers specifically to the single cell that is currently selected and highlighted by a dark border outline. Any keyboard input, formula entry, or editing action performed by the user is directed exclusively into this active cell, whose coordinate address displays in the Name Box.

135. (D) I, II, and III
Keyboard shortcuts increase operational efficiency significantly. Ctrl + X cuts selected cell contents to the clipboard, Ctrl + V pastes clipboard data into targeted locations, and Ctrl + A selects every cell across the active worksheet grid instantly, providing powerful commands for rapid data manipulation and selection across workbooks.

136. (A) Ctrl + P
Navigation controls like Page Down, Tab, and Ctrl + Home move the active cell cursor across worksheet rows, columns, and grid boundaries efficiently. In contrast, Ctrl + P is a system command shortcut designated specifically for opening the Print menu panel, rather than navigating between cells within active worksheet grids.

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deletes underlying numerical data or cell formula values.

116. (D) Only the selected block of cells will be printed, ignoring the rest of the worksheet.
Setting a Print Area isolates specific sheet coordinates for paper output or export. Once defined, printing operations restrict output strictly to the designated cell block while completely ignoring remaining worksheet sections, allowing users to print focused summary tables or specific report sections without outputting entire raw datasets.

117. (C) You cannot change the page orientation from Portrait to Landscape in Excel.
Page Setup parameters offer extensive print customization capabilities, including margin adjustments, gridline printing, selection scope, and scaling options. Claiming that page orientation cannot be changed from Portrait to Landscape is false, as switching print orientation to Landscape is a standard feature designed to accommodate wide data tables cleanly.

118. (B) Ctrl + P
The keyboard combination Ctrl + P serves as the universal system shortcut to open the Print screen. In modern spreadsheet software, this action immediately displays the Print configuration panel alongside an interactive Print Preview window, enabling users to inspect document layouts before sending pages to physical printing devices.

119. (D) Scale to Fit (Fit to 1 page wide)
When tabular reports slightly exceed standard paper widths, utilizing the Scale to Fit feature automatically adjusts font sizes and column dimensions to fit the printout across one page wide. This prevents isolated columns from breaking onto separate pages, ensuring clean, unified report presentations on printed pages.

120. (A) P-2, Q-4, R-1, S-3
XLSX is the default file format for modern Excel workbooks. CSV stores structured tabular data as comma-separated plain text. PDF preserves visual layouts across platforms in a portable format. TXT represents basic unformatted plain text files widely supported across simple text viewing software applications and operating systems.

121. (C) .xlsx
Modern versions of Microsoft Excel use .xlsx as their default file extension for standard macro-free workbooks. Introduced with the Open XML file standard, this compressed XML-based file format improves data recovery, reduces overall file sizes, and enhances cross-platform interoperability compared to legacy binary file formats used in older releases.

122. (A) By a comma
The Comma Separated Values file format stores tabular data in plain text, organized into lines corresponding to rows. Within each row line, individual column entries are separated specifically by commas. This simple text structure makes the file format highly compatible across diverse database applications and data processing tools.

123. (D) To export plain tabular data for compatibility with other software systems
Saving workbooks as CSV files strips proprietary formatting and complex structures, converting tabular grids into plain text data lines. Users choose this format primarily to export raw tabular datasets, ensuring seamless data compatibility and smooth importing into external databases, statistical programs, software platforms, and enterprise management systems.

124. (B) Executable Application (*.exe)
The Save As dialog box supports diverse exported document formats including macro-enabled workbooks, PDF documents, single web pages, text files, and CSV spreadsheets. Executable Application files are standalone compiled software binaries, making executable file generation completely unavailable as a output file saving format inside spreadsheet software interfaces.

125. (B) I, III, and IV
Exporting workbooks to PDF ensures consistent document presentation across devices, enabling print headings displays row and column labels, and Portrait serves as default orientation. However, CSV files are restricted to plain text for a single sheet; they cannot store multiple worksheets or preserve complex workbook multi-tab structures.

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(A) Power on → BIOS/POST → Bootloader → OS loaded into RAM
(B) Power on → OS loaded into RAM → BIOS/POST → Bootloader
(C) Power on → Bootloader → BIOS/POST → OS loaded into RAM
(D) Power on → BIOS/POST → OS loaded into RAM → Bootloader

23. What is the difference between an Administrator account and a Guest account in an operating system?
(A) A Guest account holds full installation privileges, whereas an Administrator is restricted from making software changes
(B) An Administrator controls system settings, while a Guest has restricted access
(C) Both account types possess identical system permissions but maintain different passwords and login credentials
(D) A Guest account is designed exclusively for network connections and remote terminal access management

24. What does the Disk Defragmenter utility do?
(A) It permanently removes unused files and cleans temporary data from hard drives
(B) It compresses stored user files and system folders to optimize total available disk space
(C) It reorganizes fragmented disk data to store files contiguously and improve speed
(D) It scans system files for malware, viruses, and unauthorized security threats

25. Which term describes a technique where the operating system uses a portion of the hard disk as if it were RAM?
(A) Cache Memory
(B) Flash Memory
(C) Read-Only Memory
(D) Virtual Memory

26. What does "CLI" stand for in operating systems?
(A) Command Line Interface
(B) Computer Logic Interface
(C) Common Language Input
(D) Core Linux Interface

27. macOS is fundamentally based on which operating system family?
(A) Windows NT
(B) UNIX
(C) MS-DOS
(D) OS/2

28. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Using Disk Cleanup periodically is recommended for computer maintenance.
Reason (R): Disk Cleanup safely removes unnecessary temporary files and empties the Recycle Bin to free up storage space.
(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

29. What is a device driver?
(A) System software enabling the operating system to communicate with hardware
(B) A specialized physical expansion port used for connecting high-speed external devices
(C) An internal power delivery unit that supplies electricity to the motherboard components
(D) A high-capacity secondary storage device reserved exclusively for system data backups

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30. Which of the following tasks is typically performed using the Control Panel in Windows?
(A) Creating, editing, and formatting text documents
(B) Accessing online web pages and browsing the internet
(C) Modifying system settings and hardware devices
(D) Compiling and debugging software source code

31. What is the purpose of booting a Windows computer in "Safe Mode"?
(A) To optimize system resources for running graphics-intensive applications smoothly
(B) To scan system storage and permanently delete infected files from the hard drive
(C) To bypass bandwidth restrictions and significantly increase internet download speeds
(D) To boot the system with minimal drivers and services for troubleshooting

32. Match the operating system terms in List I with their definitions in List II:
List I: (Term)
P. Booting

137. (C) Pressing 'Ctrl + A' deletes all data in the worksheet.
Pressing Enter moves cell focus down, Shift + Enter shifts focus up, and Escape cancels active edits cleanly. However, pressing Ctrl + A functions as a selection command that selects the entire worksheet grid or active data region; it does not clear, delete, or purge cell contents from the spreadsheet.

138. (A) It efficiently processes large datasets, performs calculations, and visualizes data.
Spreadsheet applications are indispensable in office and statistical settings due to their powerful calculation engines, structured data grid organization, extensive analytical function libraries, and chart generation capabilities. These integrated features enable professionals to model financial scenarios, evaluate statistical metrics, and present data insights accurately and efficiently.

139. (D) Enter 1 and 2, select both, and drag the Fill Handle down
Generating long sequential number series manually is tedious and inefficient. Entering initial seed numbers such as one and two establishes an incremental numerical pattern. Selecting both cells and dragging the Fill Handle down automatically extrapolates the established sequence, filling hundreds of consecutive serial numbers into cells rapidly and accurately.

140. (B) Excel adjusts the row numbers in the formula to reflect the new row.
Replicating formulas containing relative cell references down a column using the Fill Handle triggers automatic reference recalculation. As the formula moves vertically across successive rows, the software automatically increments the row index numbers within cell references to correspond to each new destination row, maintaining correct spatial formula offsets.

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105. (A) Only I and II
Accessed via the View tab, Freeze Panes keeps headers visible on screen while scrolling and can be unfrozen whenever desired. However, pane freezing is purely an on-screen viewing preference; it has no impact on paper printouts, where page layout settings determine whether header rows repeat on printed pages.

106. (A) Restricting the type or value of data entered into a cell
Data Validation is a crucial data quality control tool designed to enforce entry rules on specific worksheet cells. By establishing criteria restrictions, it limits acceptable user inputs to specified data types, numeric ranges, date boundaries, or custom lists, effectively preventing incorrect data entry and maintaining dataset integrity across tables.

107. (D) It can create a drop-down list of allowed entries in a cell.
A highly useful capability of Data Validation involves creating interactive drop-down pick lists within cells. By configuring validation rules using list sources, users are presented with predefined choice menus when clicking cells, restricting choices to valid entries while speeding up repetitive manual data entry across data collection sheets.

108. (B) Excel displays an Error Alert and rejects the entry.
When Data Validation criteria are applied to a cell, input values are checked against defined rules prior to acceptance. Entering a number outside the allowed numeric range violates the rule, triggering an automated Error Alert window that blocks the invalid entry and prompts the user to input a valid number.

109. (C) Data Tab
Data tools designed for processing, cleansing, and validating information are centralized on the Data tab of the main interface ribbon. Navigating to the Data Tools group on this tab provides direct access to the Data Validation command button, allowing users to configure input rules, messages, and validation alerts.

110. (A) P-3, Q-4, R-1, S-2
Data Validation restricts cell inputs to authorized values. Freeze Panes keeps row and column headers locked during scrolling navigation. Conditional Formatting applies dynamic visual highlights based on designated criteria rules. Merge & Center combines multiple adjacent cells into a single unified cell while centering contained text.

111. (A) Changing cell formatting automatically based on cell value or formula rules
Conditional Formatting dynamically alters the visual representation of cells based on specified rule conditions. By evaluating cell values or formula outputs against predefined rules, the application automatically updates formatting styles, such as font colors, borders, or cell fills, drawing immediate visual attention to key trends and anomalies.

112. (B) Conditional Formatting
Highlighting specific performance thresholds, such as marks falling below passing limits, is best accomplished using Conditional Formatting. Setting a highlight rule to target numbers lower than thirty-three automatically applies custom red fill colors or contrasting text styles to matching cells, making low scores instantly distinguishable across large lists.

113. (B) Insert Chart Rules
Conditional Formatting features prebuilt formatting categories including Highlight Cells Rules, Top/Bottom Rules, Data Bars, Color Scales, and Icon Sets. Insert Chart Rules is not a valid conditional formatting category, as generating embedded graphical charts relies on separate chart insertion tools rather than automated conditional cell styling mechanisms.

114. (A) Data Bars
Data Bars represent a specialized conditional formatting visual feature that inserts horizontal colored bars inside individual cells. The length of each bar corresponds directly to the numerical value stored in that cell relative to surrounding cells, creating in-cell bar graphs that facilitate quick comparative visual analysis across rows.

115. (B) I, II, and IV
Conditional formatting applies dynamic icon sets, allows multiple overlaying rules per cell, and offers clear options to strip rules cleanly. Crucially, conditional formatting is purely a visual presentation layer; it modifies only cell appearances and never alters, overwrites, or

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(C) Apple
(D) IBM

11. Which operating system is exclusively used in Apple iPhones?
(A) macOS
(B) iOS
(C) Android
(D) Symbian

12. What is the function of the Recycle Bin in a Windows operating system?
(A) To organize user applications and programs
(B) To store recently deleted files and folders
(C) To purge unwanted files permanently from storage
(D) To update installed hardware device drivers

13. Match the operating systems in List I with their primary developers in List II:
List I: (Operating System)
P. Windows
Q. macOS
R. Android
S. Ubuntu
List II: (Developer)
1. Open-source community (Canonical)
2. Apple
3. Microsoft
4. Google
(A) P-3, Q-2, R-4, S-1
(B) P-3, Q-4, R-2, S-1
(C) P-4, Q-2, R-1, S-3
(D) P-2, Q-3, R-1, S-4

14. Which shortcut key is commonly used in Windows to rename a selected file or folder?
(A) F1
(B) F2
(C) F3
(D) F5

15. The capability of an operating system to run more than one application at the same time is called?
(A) Multi-user
(B) Multiprocessing
(C) Time-sharing
(D) Multitasking

16. Which of the following is considered a multi-user operating system?
(A) MS-DOS
(B) Windows 95
(C) Unix
(D) Palm OS

17. In which type of operating system must tasks be processed within a strict, specific time limit to avoid system failure?
(A) Batch operating system
(B) Real-time operating system
(C) Time-sharing operating system
(D) Distributed operating system

18. What is the primary characteristic of a Batch Processing Operating System?
(A) Continuous direct interaction between the user and the system during job execution
(B) Allocation of strict time slices to multiple remote users connected simultaneously
(C) Immediate real-time responses provided for time-critical hardware operations
(D) Grouping similar jobs together to execute in batches without user intervention

19. Consider the following statements regarding the Windows Operating System:
I. It features a Graphical User Interface (GUI).
II. It was initially developed by Apple.
III. It supports multitasking and multi-threading.
IV. File Explorer is the default file management application in Windows.
Which of the above statement(s) is/are correct?
(A) I, II and III
(B) I, III and IV
(C) II, III and IV
(D) I, II, III and IV

20. Which keyboard shortcut is used to open Windows File Explorer?
(A) Windows Key + E
(B) Windows Key + F
(C) Windows Key + R
(D) Windows Key + X

21. What is the main purpose of the Task Manager in Windows?
(A) To monitor running processes and terminate unresponsive programs
(B) To download, install, and configure administrative system updates
(C) To format secondary storage drives and manage disk partitions
(D) To configure user accounts, passwords, and security privileges

22. Select the correct sequential order of the basic booting process steps:

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CHAPTER 12
Operating System

1. Which of the following best defines an Operating System?
(A) A software that protects the computer from viruses
(B) A system software that acts as an interface between the user and computer hardware
(C) A collection of hardware components
(D) An application software used for creating documents

2. Which of the following is not a primary function of an operating system?
(A) Memory Management
(B) Process Management
(C) File Management
(D) Internet Browsing

3. What is the primary difference between a GUI and a CLI operating system?
(A) GUI relies on visual elements like windows and icons, whereas CLI requires typing text commands
(B) GUI uses text commands, whereas CLI uses graphical icons
(C) GUI is used only in single-user systems, whereas CLI is for multi-user systems
(D) GUI requires less system memory than CLI

4. Consider the following statements regarding the booting process:
I. Cold booting occurs when a computer is turned on from a completely powered-off state.
II. Warm booting occurs when a computer is restarted using the operating system without switching off the power.
III. Booting involves loading the operating system from secondary storage into RAM.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

5. Which of the following is an example of a single-user, single-tasking operating system?
(A) MS-DOS
(B) Windows 10
(C) Linux
(D) macOS

6. What does the term "GUI" stand for in the context of operating systems?
(A) General Utility Interface
(B) Global User Information
(C) Graphical Unified Interconnect
(D) Graphical User Interface

7. Which of the following operating systems is open-source?
(A) Windows 11
(B) Linux
(C) macOS
(D) iOS

8. In a Windows operating system, where is the taskbar typically located by default?
(A) At the top of the screen
(B) At the bottom of the screen
(C) On the left side of the screen
(D) On the right side of the screen

9. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The operating system acts as a resource manager for the computer.
Reason (R): The operating system allocates CPU time, memory, and hardware devices to different programs as needed.
(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

10. The Android operating system is primarily developed by which company?
(A) Google
(B) Microsoft

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Q. Spooling
R. Multitasking
S. Paging

List II: (Definition)

1. Temporarily storing output data (like print jobs) before sending it to a device
2. Loading the OS into main memory
3. A memory management scheme that retrieves data from secondary storage in same-size blocks
4. Executing multiple tasks simultaneously

(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-4, S-2

33. How can a user restore a file that has been sent to the Recycle Bin?
(A) By reformatting the primary hard drive partition using administrative command utilities
(B) By opening the Recycle Bin, right-clicking the file, and choosing "Restore"
(C) By generating an entirely new document in the same directory using an identical filename
(D) By launching the Disk Defragmenter tool to reorganize deleted data blocks on storage

34. Which of the following is not an example of an Operating System?
(A) Android Mobile Operating System
(B) Linux Kernel-based OS
(C) macOS Desktop Operating System
(D) Microsoft Excel

35. Ubuntu and Fedora are popular distributions of which operating system?
(A) Linux
(B) Windows
(C) macOS
(D) Solaris

36. Consider the following statements regarding the Android operating system:
I. It is an open-source operating system.
II. It is based on a modified version of the Linux kernel.
III. It is designed primarily for desktop computers.

Which of the above statement(s) is/are correct?
(A) I and III only
(B) II and III only
(C) I and II only
(D) I, II and III

37. In the Windows file system, which character is used as a separator between directory names in a file path?
(A) Backslash (\)
(B) Forward slash (/)
(C) Colon (:)
(D) Asterisk (*)

38. A Time-Sharing Operating System works on the principle of?
(A) Collecting and processing background jobs sequentially in batches without direct user intervention
(B) Delivering ultra-fast real-time responses to critical hardware interrupts within microseconds
(C) Dedicating total CPU execution time to a single application until its process finishes completely
(D) Assigning fixed time slices to tasks in a round-robin schedule

39. Which category of software does an operating system belong to?
(A) Application Software
(B) System Software
(C) Utility Software
(D) Firmware

40. Which keyboard shortcut is traditionally used in Windows to bring up a security screen offering access to the Task Manager, Lock, and Sign out options?
(A) Ctrl + Shift + Esc
(B) Alt + Tab
(C) Ctrl + Alt + Delete
(D) Windows Key + D

41. What is the primary function of a firewall in an operating system?
(A) To regulate internal hardware temperature and prevent physical overheating of the central processing unit
(B) To scan secondary storage drives and automatically recover corrupted or deleted files from partitions
(C) To reorganize fragmented data clusters across the hard drive to optimize file access performance
(D) To filter incoming and outgoing network traffic using predefined security rules

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42. Why is it important to regularly install operating system updates?
(A) To patch security bugs and improve system stability
(B) To modify the physical color and exterior design of the computer casing hardware
(C) To automatically convert a command line interface into a full graphical user interface
(D) To expand the physical capacity and hardware memory limits of installed system RAM chips

43. Consider the following functions related to computing environments:
I. Managing computer memory
II. Managing files and folders
III. Providing a user interface
IV. Compiling Java programs automatically
Which of the above functions is/are standard functions of an operating system?
(A) I, II and III
(B) II, III and IV
(C) I, III and IV
(D) I, II, III and IV

44. In the context of Windows file systems, what does "FAT" stand for?
(A) File Access Terminal
(B) File Allocation Table
(C) Folder Arrangement Table
(D) Fast Access Transfer

45. What does "NTFS", the default file system for modern Windows, stand for?
(A) New Technology File System
(B) Network Transfer File System
(C) Non-Text File System
(D) National Technology Folder System

46. Arrange the following steps in the correct order to permanently delete a file in Windows without sending it to the Recycle Bin:
1. Press Shift + Delete keys together
2. Click 'Yes' on the confirmation prompt
3. Select the file
4. Locate the file in Windows Explorer
(A) 4, 3, 1, 2
(B) 3, 4, 2, 1
(C) 4, 1, 3, 2
(D) 1, 2, 3, 4

47. What does making a file "Hidden" in Windows do?
(A) It encrypts the file contents using advanced security algorithms so unauthorized users cannot read it
(B) It permanently deletes and removes the selected file entry from the secondary storage hard drive
(C) It compresses the file structure using lossy archiving techniques to conserve local disk space
(D) It hides the file from standard folder views until system settings reveal hidden items

48. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): A multitasking operating system allows a user to listen to music while typing a document.
Reason (R): The operating system rapidly switches the CPU's attention between the music player and the word processor, giving the illusion of simultaneous execution.
(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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49. What does it mean to "format" a disk drive in an operating system?
(A) To scan all sectors of the disk drive to detect and remove malicious software threats
(B) To set up a file system on the drive, erasing existing data in the process
(C) To assign a new custom drive letter and network label to the storage volume partition
(D) To safely dismount and eject the physical disk drive from the operating system interface

50. In the Linux file system hierarchy, what represents the highest-level directory (the root)?
(A) C:\
(B) ~
(C) \root
(D) /

51. Which shortcut creates a new folder in Windows File Explorer?
(A) Ctrl + Shift + N
(B) Ctrl + N
(C) Alt + N
(D) Shift + F

52. Match the Windows shortcut keys in List I with their actions in List II:
List I: (Shortcut Key)
P. Windows Key + D
Q. Windows Key + L
R. Windows Key + R
S. Windows Key + I
List II: (Action)
1. Open Settings
2. Lock the computer
3. Show or hide the desktop
4. Open the Run dialog box
(A) P-3, Q-2, R-4, S-1
(B) P-2, Q-3, R-1, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-3, Q-4, R-1, S-2

53. Which of the following is true about a standard Guest account in Windows?
(A) It provides temporary user access while preventing system modifications or software installation
(B) It allows users to modify critical system files, registry entries, and hardware driver configurations safely
(C) It mandatorily requires an active registered Microsoft online user account to function properly
(D) It grants full unrestricted administrative privileges across all system directories and tools

54. What is the primary role of antivirus software running within an operating system?
(A) To optimize network adapter settings and significantly increase total internet connection bandwidth
(B) To monitor open network ports and block unauthorized incoming remote desktop connections
(C) To check hardware vendor databases and update all device drivers automatically
(D) To scan, detect, and remove malicious software such as viruses and worms

55. Which of the following is the odd one out?
(A) Microsoft Windows 11
(B) Oracle Database
(C) Linux Mint Distribution
(D) Google Android 14

56. The very first program loaded from the hard disk into RAM when a computer starts is the?
(A) Application Web Browser
(B) Antivirus Security Utility
(C) Operating System
(D) Microsoft Word Processing Application

57. Consider the following operating system interfaces:
I. Command Line Interface (CLI)
II. Graphical User Interface (GUI)
III. Touch-based interface
Which of the above options correctly represent standard ways users interact with operating systems?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

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58. What happens when a Windows computer is put into "Sleep" mode?
(A) The computer saves its current state to RAM and enters a low-power state
(B) All running programs are closed and the computer shuts down completely
(C) The computer saves its current state to the hard drive and cuts power entirely
(D) The computer restarts automatically after applying updates

59. In the Windows Device Manager, what does a yellow exclamation mark next to a device indicate?
(A) The device is functioning normally and its driver is working perfectly
(B) The device has a driver error or configuration issue
(C) The device has been manually disabled by the user in system settings
(D) The device driver requires an immediate online software update

60. What does "POST" stand for in the context of the computer booting process?
(A) Primary Operating System Transfer
(B) Power-On Self Test
(C) Process Oriented System Task
(D) Pre-Operation Setup Terminal

61. Who is considered the principal creator of the Linux kernel?
(A) Linus Torvalds
(B) Bill Gates
(C) Steve Jobs
(D) Dennis Ritchie

mouse input
(B) NTFS provides significantly faster processing speeds when running legacy operating systems like MS-DOS
(C) NTFS supports larger files, larger volumes, and advanced security
(D) FAT32 is a fully open-source file format whereas NTFS is strictly proprietary Microsoft software

127. What is the primary advantage of a Time-Sharing Operating System?
(A) It significantly lowers the physical production and purchasing cost of computer hardware components
(B) It assigns an entire dedicated central processing unit strictly to a single task continuously
(C) It regulates CPU workload to effectively prevent physical computer hardware from overheating
(D) It allocates CPU time fairly among multiple simultaneous users

128. In which year was the first graphical version of Microsoft Windows (Windows 1.0) released?
(A) 1975
(B) 1981
(C) 1985
(D) 1995

129. What is the name of the default administrator account created during a Linux installation?
(A) Admin
(B) Root
(C) Superuser
(D) Host

130. Which tab in the Windows Task Manager allows you to view graphical representations of CPU, RAM, Disk, and Network usage?
(A) System Processes tab
(B) Application Startup tab
(C) Active User Accounts tab
(D) Performance monitor tab

131. What does "VMM" stand for in operating system memory management?
(A) Virtual Memory Manager
(B) Variable Memory Module
(C) Visual Machine Manager
(D) Vector Memory Matrix

132. What is the primary purpose of the "Startup" tab in the Windows Task Manager?
(A) To configure remote network settings in order to start the computer hardware remotely
(B) To initiate diagnostic recovery protocols and reboot the system into Safe Mode
(C) To manage applications that run automatically at Windows startup
(D) To automatically check for and install updated device driver software online

133. Which of the following is considered an essential system utility rather than an application software?
(A) Disk Defragmenter utility
(B) Adobe Photoshop Graphics Editor
(C) VLC Media Player Application
(D) Microsoft PowerPoint Presentation Software

134. Which user account type is generally recommended for everyday computer usage to prevent unauthorized system changes?
(A) Guest Account
(B) Administrator Account
(C) Root Account
(D) Standard Account

135. If your computer freezes and an application stops responding in Windows, which utility is best suited to forcefully close that application?
(A) Control Panel
(B) Task Manager
(C) Disk Management
(D) System Restore

136. Which OS component is responsible for keeping track of all the files, their locations, and access permissions on the hard drive?
(A) The Web Browser
(B) The Spooler
(C) The File System
(D) The Bootloader

137. Which of the following is NOT an advantage of having multiple user accounts on a single operating system?
(A) Each user account can maintain customized desktop themes, preferences, and individual settings
(B) Users are restricted from accessing each other's private files and documents by default permissions
(C) System security is enhanced by restricting standard users from holding administrative privileges
(D) It expands the total physical hardware RAM

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R. .sys
S. .jpg
List II: (File Type)
1. System file
2. Executable program
3. Plain text file
4. Image file
(A) P-3, Q-2, R-1, S-4
(B) P-2, Q-3, R-4, S-1
(C) P-3, Q-4, R-1, S-2
(D) P-1, Q-2, R-3, S-4

73. When virtual memory is utilized, the operating system borrows space from which hardware component?
(A) The CPU Cache
(B) The Graphics Card
(C) The Network Interface Card
(D) The Hard Disk / SSD

74. Which of the following best describes "Spooling" in operating systems?
(A) Buffering print jobs on disk until the printer is ready
(B) Allocating and managing dynamic RAM addresses for active foreground processes in memory
(C) Compressing stored system files and folders to conserve available secondary disk space
(D) Forcefully terminating non-responsive user applications through the OS task monitor

75. In operating system terminology, what is a "Deadlock"?
(A) A severe malware condition where a computer virus corrupts and permanently deletes all system storage files
(B) A state where processes are indefinitely blocked waiting for each other's resources
(C) A hardware storage issue occurring when the primary secondary drive completely runs out of available space
(D) A network connection failure resulting when the operating system gets abruptly disconnected from the internet

76. Which of the following graphical elements is typically NOT found in a Command Line Interface (CLI)?
(A) Text prompts
(B) Mouse pointer
(C) Keyboard input
(D) Alphanumeric characters

77. Which tool in Windows can be used to manage partitions, format drives, and assign drive letters?
(A) Disk Management
(B) Task Manager
(C) Device Manager
(D) Performance Monitor

78. Select the correct sequence of computer memory hierarchy in order of speed (Fastest to Slowest):
(A) RAM → Cache → Registers → Hard Disk
(B) Registers → Cache → RAM → Hard Disk
(C) Hard Disk → RAM → Cache → Registers
(D) Cache → Registers → Hard Disk → RAM

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79. Consider the following operating systems:
I. Android
II. iOS
III. Windows Server
Which of the above operating systems are mobile-specific?
(A) I and III only
(B) II and III only
(C) I and II only
(D) I, II and III

80. What is the Windows Registry?
(A) A system directory where permanently deleted user files are safely archived before purging
(B) A complete history log of all websites visited across all installed web browsers on the machine
(C) A centralized database storing configuration settings for Windows and applications
(D) An integrated real-time antivirus utility designed to protect Windows from malware threats

81. In which version of Windows was the traditional "Start" button completely removed from the desktop interface by default?
(A) Windows 7
(B) Windows 8
(C) Windows 10
(D) Windows XP

82. Which feature allows the Windows taskbar to disappear from the screen when not in use and reappear when the mouse cursor touches the screen edge?
(A) Taskbar locking feature
(B) Taskbar live preview mode
(C) Taskbar cascading options

(B) An antivirus and security utility
(C) A multimedia application for editing video files
(D) A storage utility for defragmenting hard drives

104. Which term describes the operating system's ability to automatically recognize and configure hardware devices as soon as they are connected?
(A) Drag and Drop
(B) Click and Go
(C) Plug and Play
(D) Sync and Charge

105. Consider the following characteristics regarding open-source operating systems:
I. The source code is freely available to the public.
II. Users can modify the code to suit their needs.
III. They are legally restricted from being installed on multiple computers.
IV. Linux is a prime example.
Which of the above statement(s) is/are correct?
(A) I, II and III
(B) I, II and IV
(C) II, III and IV
(D) I, III and IV

106. What is the function of the "Clipboard" in an operating system?
(A) A temporary buffer holding cut or copied data
(B) It permanently encrypts and stores user login credentials and account passwords
(C) It stores deleted files and system objects before they are permanently purged from storage
(D) It manages, synchronizes, and organizes web browser bookmarks and user history

107. In a GUI environment, selecting an icon, holding the mouse button down, and moving the icon to a new location is called?
(A) Point and Click
(B) Drag and Drop
(C) Cut and Paste
(D) Hovering

108. In Windows search, which wildcard character is used to represent exactly one single unknown character in a file name?
(A) Wildcard asterisk symbol (*)
(B) Question mark symbol (?)
(C) Wildcard hash symbol (#)
(D) Wildcard tilde symbol (~)

109. Which wildcard character is used to represent zero or multiple unknown characters in a file name search?
(A) Asterisk (*)
(B) Question mark (?)
(C) Dollar sign ($)
(D) Ampersand (&)

110. Where is the "System Tray" (or notification area) typically located in Windows?
(A) Positioned on the far left corner of the taskbar
(B) On the far right of the taskbar
(C) Located directly in the middle area of the desktop screen
(D) Accessible inside the main Windows Start Menu directory

111. What is the fundamental difference between "Restart" and "Shut Down" in Windows?
(A) Restart automatically applies pending operating system updates, whereas Shut Down bypasses all updates during power down
(B) Restart reformats and clears secondary hard drive storage, while Shut Down safely saves active user files to disk
(C) Both options perform completely identical power management actions and system diagnostic procedures within Windows
(D) Restart reboots the OS immediately, while Shut Down turns off power

112. The concept of the Graphical User Interface (GUI) was first successfully popularized for personal computers by which company with its Macintosh line?
(A) Microsoft
(B) IBM
(C) Apple
(D) Oracle

113. In MS-DOS, which of the following is considered an internal command?
(A) FORMAT
(B) DIR
(C) CHKDSK
(D) XCOPY

114. What does an MS-DOS "external command" mean?
(A) A command requiring an active internet

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2. Apple
3. Huawei
4. BlackBerry

(A) P-2, Q-3, R-4, S-1
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

93. What is the purpose of the User Account Control (UAC) prompt in Windows?
(A) To request user approval before software makes system changes
(B) To automatically log off the active user session after a designated period of system inactivity
(C) To measure, track, and report user typing speed and keyboard input accuracy within applications
(D) To automatically adjust monitor display brightness and color temperature based on ambient light

94. Which of the following describes a graphical component that provides a context-specific list of options when you right-click on an item?
(A) Application title bar
(B) Window scroll bar
(C) Context menu
(D) System status bar

95. What is a common keyboard shortcut to instantly minimize all open windows and show the desktop in Windows?
(A) Windows Key + P
(B) Windows Key + T
(C) Windows Key + A
(D) Windows Key + M

96. If a file's properties are set to "Read-only", what does this mean?
(A) The file is locked and cannot be opened by any user account except the system administrator
(B) The file contents are encrypted and mandatorily require a user password to view or read
(C) The file can be opened and read, but modifications cannot be saved to it
(D) The file entry is permanently hidden from standard directory views in the file manager

97. Which of the following characters cannot be used when naming a file or folder in Windows?
(A) Standard hyphen symbol (-)
(B) Question mark (?)
(C) Underscore symbol (_)
(D) Blank space character ( )

98. In the context of operating systems, what does "RTOS" stand for?
(A) Remote Transfer Operating System
(B) Random Task Operating System
(C) Reliable Terminal Operating System
(D) Real-Time Operating System

99. Consider the following applications:
I. Air traffic control systems
II. Medical life-support machines
III. Word processing
Which of the above applications require a Real-Time Operating System (RTOS)?
(A) I and III only
(B) I and II only
(C) II and III only
(D) I, II and III

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100. How did users primarily input data and programs into early Batch Processing Operating Systems?
(A) Interactively navigating with a mouse and graphical user interface
(B) Speaking directly to the computer system through voice recognition commands
(C) Using physical punched cards or magnetic tapes
(D) Tapping graphical menus directly on interactive hardware touchscreens

101. Which of the following is NOT a mobile operating system?
(A) MS-DOS
(B) Android
(C) iOS
(D) Symbian

102. When a Windows PC is placed into Hibernate mode, where is the current system state saved?
(A) Inside high-speed central processing unit cache memory registers
(B) Directly within main system volatile Random Access Memory (RAM) chips
(C) Remotely on an externally connected USB flash storage drive
(D) On the primary hard disk drive or solid-state drive

103. Windows Defender is an integrated feature of Windows 10/11 primarily acting as?
(A) An integrated web browser for internet navigation

(D) Auto-hide the taskbar

83. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Device drivers are essential for hardware to function properly with an operating system.
Reason (R): Device drivers act as translators, converting generic operating system commands into device-specific instructions.
(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

84. What is the function of the "System Restore" tool in Windows?
(A) To scan secondary storage drives and automatically recover deleted files from an emptied Recycle Bin
(B) To completely reset the operating system to its original factory state, erasing all personal user data
(C) To revert system files, registry settings, and programs to a previous restore point
(D) To automatically back up personal user files and system documents to a secure remote cloud server

85. The Disk Cleanup tool primarily removes which type of files?
(A) Temporary system files, web cache, and Recycle Bin items
(B) Personal user documents, spreadsheets, media files, and digital photos
(C) Core operating system system files essential for booting up Windows
(D) Hardware device drivers required for external peripherals to function

86. In the context of memory management, what does "Paging" refer to?
(A) Printing long text documents sequentially page by page on a physical printer
(B) Numbering and organizing user files inside a directory folder in numerical order
(C) Arranging application icons and desktop shortcuts in an aligned screen grid layout
(D) Dividing memory into fixed-size blocks called pages for allocation

87. Consider the following statements regarding Virtual Memory:
I. It is part of the hard drive used as RAM.
II. It increases the physical capacity of RAM chips.
III. It allows the computer to run larger programs than physical RAM permits.
IV. When RAM is full, inactive data is swapped to virtual memory.
Which of the above statement(s) is/are correct?
(A) I, III and IV
(B) II, III and IV
(C) I, II and III
(D) I, II and IV

88. In a Linux operating system, the core component that interacts directly with the hardware is called the?
(A) Shell
(B) GUI
(C) Kernel
(D) Terminal

89. MS-DOS operates primarily through which type of interface?
(A) Touchscreen Interface
(B) Graphical User Interface (GUI)
(C) Voice User Interface
(D) Command Line Interface (CLI)

90. The UNIX operating system was predominantly written in which programming language?
(A) C
(B) Java
(C) Python
(D) Assembly Language

91. Historically, early and mid-generation Android versions were named alphabetically after what?
(A) Famous historical scientists and researchers
(B) Sweet treats and desserts
(C) Wild animals and endangered species
(D) Major planets in the solar system

92. Match the mobile operating systems in List I with their associated companies in List II:
List I: (Mobile Operating System)
P. iOS
Q. HarmonyOS
R. BlackBerry OS
S. Windows Phone
List II: (Company)
1. Microsoft

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connection to execute remotely
(B) A command executed on a remote network server across terminal nodes
(C) A command specifically designed to configure external hardware peripherals
(D) A command stored in a separate executable file on disk

115. In operating system development, what does "API" stand for?
(A) Application Programming Interface
(B) Advanced Process Integration Framework
(C) Automated Program Instruction Protocol
(D) Allocation Protocol Identification System

116. What is the difference between multiprocessing and multitasking?
(A) Multiprocessing allows simultaneous multiple user sessions, whereas multitasking restricts system access to a single user account
(B) Multitasking depends exclusively on physical hardware components, whereas multiprocessing is handled purely through software drivers
(C) Multiprocessing utilizes multiple CPUs, while multitasking uses one CPU to handle concurrent tasks
(D) Both terms describe identical process scheduling mechanisms and are used interchangeably in modern computer architecture

117. A computer will fail to boot entirely if it does not have a functional:
(A) Operating System
(B) Physical Computer Mouse
(C) Antivirus Protection Software
(D) Installed Web Browser Application

118. Which principle of free software ensures that anyone can inspect and modify the operating system's internal code?
(A) Closed Source
(B) Freeware
(C) Shareware
(D) Open Source

119. What is the mascot of the Linux operating system?
(A) A Macintosh Apple icon
(B) A Tux Penguin mascot
(C) A Microsoft Window logo
(D) An Android Robot mascot

120. In Windows 10 and 11, which web browser is installed as the default by the operating system?
(A) Google Chrome
(B) Mozilla Firefox
(C) Microsoft Edge
(D) Internet Explorer

121. What is a folder placed inside another folder called?
(A) Root folder
(B) Superfolder
(C) Parent folder
(D) Subfolder

122. In a standard filename (like document.txt), what separates the file's primary name from its extension?
(A) A dot or period (.)
(B) A comma (,)
(C) A colon (:)
(D) A semicolon (;)

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123. What is the maximum character length for a file path (including filename) in standard older Windows environments before changing registry limits?
(A) 8 characters
(B) 64 characters
(C) 260 characters
(D) 1024 characters

124. What is a "Shortcut icon" on the Windows desktop?
(A) The primary executable application binary file stored directly on the desktop drive
(B) A small desktop link pointing to an item located elsewhere
(C) An infected system executable file intentionally disguised and hidden by malicious software
(D) An automatically updated duplicate backup copy of a user directory folder on the storage drive

125. What does "UAC" stand for in the context of Windows operating system security?
(A) User Account Control
(B) Unified Access Control
(C) Universal Application Compatibility
(D) User Action Center

126. Why is NTFS preferred over FAT32 in modern Windows operating systems?
(A) FAT32 is an outdated file structure that lacks essential modern support for graphical

62. What is the standard file extension for an installation package on the Android operating system?
(A) .exe
(B) .dmg
(C) .apk
(D) .deb

63. From where do users primarily download applications on the iOS operating system?
(A) Google Play Store
(B) Microsoft Store
(C) Windows Update
(D) Apple App Store

64. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Linux is an open-source operating system.
Reason (R): The source code of Linux is freely available for anyone to view, modify, and distribute.
(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

65. The Command Prompt (cmd) in Windows is an example of which type of interface?
(A) GUI
(B) CLI
(C) Menu-driven interface
(D) Touch interface

66. In the context of booting, what does "BIOS" stand for?
(A) Boot Interface Operating System
(B) Binary Input Output System
(C) Base Internal Operating System
(D) Basic Input Output System

67. Consider the following file management activities:
I. Creating a new folder
II. Changing the file extension
III. Renaming a file
IV. Upgrading the CPU
Which of the above activities can be performed using Windows File Explorer?
(A) I, II and IV
(B) I, II and III
(C) II, III and IV
(D) I, III and IV

68. Which of the following is true about "moving" a file compared to "copying" a file?
(A) Moving retains the original file in its source folder, while copying permanently deletes the source file after transfer
(B) Both file operations require completely reformatting the destination storage drive prior to transferring data
(C) Moving relocates the file, whereas copying duplicates it at the destination
(D) Moving a file automatically alters its file extension format to ensure system compatibility with the new directory

69. How can a user select multiple continuous files in a folder using the keyboard and mouse?
(A) Hold Shift, click the first file, then click the last file
(B) Hold down the Ctrl key continuously while left-clicking each individual file sequentially in the list
(C) Hold down the Alt key on the keyboard and click both the initial and final file items in the view
(D) Press the Tab key repeatedly to navigate through and automatically highlight all files in the directory

70. How can a user select multiple non-continuous (random) files in a folder?
(A) Hold the Shift key down continuously and click each desired file in the folder list
(B) Hold the Windows logo key on the keyboard and left-click each targeted file item
(C) Double click rapidly on each individual file within the open directory window
(D) Hold the Ctrl key and click each desired file

71. The visual area on a computer screen where graphical applications are displayed is called a?
(A) Icon
(B) Window
(C) Taskbar
(D) Menu

72. Match the common file extensions in List I with their file types in List II:
List I: (File Extension)
P. .txt
Q. .exe

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capacity of the computer

138. The blue screen that appears in Windows when the system encounters a critical error from which it cannot recover is commonly called?
(A) Blue Screen of Death (BSOD)
(B) Red Screen of Severe System Death
(C) Diagnostic Safe Mode Startup Screen
(D) Critical Boot Hardware Error Screen

139. In a dual-boot setup, what is the role of the boot manager (like GRUB)?
(A) To automatically download and apply software updates to both operating systems simultaneously
(B) To display a menu for selecting which OS to boot at startup
(C) To execute and run two operating systems concurrently side-by-side on a single screen monitor
(D) To automatically create and format storage partitions across the hard drive during installation

140. Which of the following best summarizes the role of the operating system in daily computer use?
(A) It serves exclusively as application software for creating office documents, spreadsheets, and presentations
(B) It manages hardware resources and provides a platform for running user programs
(C) It functions purely as a network adapter driver required only when connecting the computer to the internet
(D) It operates as a physical thermal cooling component attached directly to protect the system motherboard

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72. (A) P-3, Q-2, R-1, S-4
File extensions indicate data formats: The extension .txt designates plain text documents. The extension .exe identifies executable program setup files. The extension .sys denotes core operating system driver files. The extension .jpg represents compressed digital image files, enabling the operating system to pair each file type with its default software application viewer.

73. (D) The Hard Disk / SSD
Virtual memory is a space allocation system where the operating system utilizes secondary storage hardware, such as hard disk drives or solid-state drives, to supplement physical Random Access Memory. When RAM capacity is exhausted, inactive data blocks are swapped to dedicated page files on the storage drive, enabling applications to continue running smoothly without memory errors.

74. (A) Buffering print jobs on disk until the printer is ready
Spooling, which stands for Simultaneous Peripheral Operations On-Line, is a system buffering technique where data intended for slower peripheral devices is temporarily stored in primary disk memory. In printing, document print jobs are held in a spooling queue on storage, allowing the CPU to complete processing tasks rapidly without waiting for physical printer hardware output.

75. (B) A state where processes are indefinitely blocked waiting for each other's resources
In operating system process execution, a deadlock represents a circular waiting condition where two or more concurrent processes are indefinitely blocked because each process holds a system resource that another process needs while waiting to acquire a resource locked by another. Without operational intervention or resolution algorithms, deadlocked processes remain permanently frozen, unable to complete execution.

76. (B) Mouse pointer
A Command Line Interface operates entirely through text input and command keyboard execution within a console terminal prompt. Unlike Graphical User Interfaces that depend heavily on pointing devices like mouse pointers to manipulate buttons and icons, a command line relies exclusively on keyboard text commands, alphanumeric characters, and system text output prompts for program execution.

77. (A) Disk Management
Disk Management is an integrated administrative system utility in Windows used for handling storage devices. It allows system administrators to view physical disk drives, initialize new hard drives, create or delete drive partitions, format storage volumes using specific file systems, and assign customized drive letters to internal or external storage media.

78. (B) Registers → Cache → RAM → Hard Disk
Computer memory architecture follows a hierarchical structure based on operating speed and physical access times. CPU registers represent the fastest memory, located directly on the processor die, followed by high-speed processor cache, main system RAM, and finally secondary storage devices like magnetic hard disk drives, which operate significantly slower than volatile semiconductor memory modules.

79. (C) I and II only
Android and iOS are operating systems designed specifically for mobile hardware architectures, including smartphones and tablets. Windows Server is an enterprise server operating system engineered by Microsoft to manage network resources, domain accounts, enterprise applications, and server infrastructure, operating on desktop-class or dedicated enterprise server hardware rather than mobile handheld devices.

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80. (C) A centralized database storing configuration settings for Windows and applications
The Windows Registry is a hierarchical database used by the Microsoft Windows operating system to store configuration settings, hardware setup parameters, user profiles, installed application preferences, and system security policies. It provides a central structure accessed continuously by the kernel, software applications, and system background drivers during computer operation and software execution.

81. (B) Windows 8
In Windows 8, Microsoft replaced the traditional desktop Start button and Start menu with a full-screen touch-centric Start Screen featuring live tiles. This major design shift was met with criticism from traditional desktop users, prompting Microsoft to reinstate a restored

or auto-hide settings through system preferences according to personal workflow requirements.

9. (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
An operating system functions as a resource manager because it arbitrates access to physical and logical components inside a computer system. It dynamically controls central processing unit time allocations, manages system main memory space, supervises storage devices, and coordinates input-output peripherals. Consequently, managing and allocating hardware hardware resources directly justifies why the operating system is classified as a primary resource manager.

10. (A) Google
The Android operating system was originally created by Android Inc., which was acquired by Google in 2005. Google continues to lead the ongoing development, maintenance, and distribution of Android alongside the Open Handset Alliance. Designed primarily for touchscreen mobile devices such as smartphones and tablets, Android uses a customized Linux kernel as its fundamental core architectural framework.

11. (B) iOS
iOS is a proprietary mobile operating system created and developed exclusively by Apple Inc. for its iPhone product line. Derived from the desktop macOS architecture, iOS is engineered specifically for touchscreen operation, offering integrated security, hardware-software optimization, and access to Apple ecosystem services. It cannot be legally licensed or officially installed on non-Apple mobile communication devices or third-party hardware.

12. (B) To store recently deleted files and folders
The Recycle Bin in Microsoft Windows serves as a temporary storage area for files and folders deleted from local drive storage. When items are removed, they are relocated to this directory, allowing users to restore them back to their original locations if deleted accidentally. Items remain stored inside the Recycle Bin until it is manually emptied or cleared automatically.

13. (A) P-3, Q-2, R-4, S-1
Different operating systems are maintained by distinct organization developers. Windows is developed by Microsoft Corporation as a commercial desktop platform. macOS is engineered by Apple Inc. exclusively for Mac hardware. Android is managed by Google for mobile computing environments. Ubuntu is an open-source Linux distribution developed and supported primarily by Canonical along with an active global developer community.

14. (B) F2
In the Windows operating system, pressing the F2 function key while a file or folder is highlighted activates inline file renaming. This shortcut allows users to quickly modify the name of selected items without navigating through right-click context menus or properties dialog windows. It functions across Windows File Explorer, desktop icons, and various system directory navigation windows.

15. (D) Multitasking
Multitasking refers to the operating system's ability to execute or process multiple distinct applications or tasks concurrently. In single-processor systems, the operating system achieves multitasking by rapidly switching the central processing unit's attention among open tasks using time-slicing algorithms. This creates the seamless appearance that several operations are running simultaneously without requiring human user intervention or manual task restarts.

16. (C) Unix
Unix is a powerful multi-user, multitasking operating system engineered to allow multiple independent users to access system resources simultaneously. Developed at Bell Labs, Unix provides robust file permissions, process isolation, and concurrent session handling. In contrast, operating systems like MS-DOS, Windows 95, and Palm OS were primarily designed for single-user desktop or personal handheld digital assistant environments.

17. (B) Real-time operating system
A real-time operating system is engineered to process data and respond to inputs within deterministic and strict timing constraints. Delays in processing can lead to total system failure or catastrophic outcomes in time-critical environments. Consequently, real-time operating

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systems are deployed in specialized applications such as flight control automation, medical life support devices, industrial robotics, and automotive braking controls.

18. (D) Grouping similar jobs together to execute in batches without user intervention
A batch processing operating system organizes computational tasks with similar requirements into groups called batches for sequential execution. Users submit their programs to an operator without direct interactive session control. The system executes these batched jobs consecutively, maximizing central processing unit utilization and reducing operational setup overhead between programs, making it ideal for large-scale non-interactive data workloads.

19. (B) I, III and IV
Microsoft Windows features an intuitive Graphical User Interface, provides support for multitasking and multi-threading execution, and incorporates File Explorer for system directory management. It was created and continuously developed by Microsoft Corporation rather than Apple. Windows remains one of the most widely deployed commercial operating systems across desktop, laptop, and enterprise computing environments globally.

20. (A) Windows Key + E
Pressing the Windows Key in combination with the letter E opens Windows File Explorer immediately from anywhere within the operating system. This keyboard shortcut provides rapid user access to local storage drives, system folders, network locations, and recent files without needing to locate or double-click the File Explorer application icon on the taskbar or desktop interface.

21. (A) To monitor running processes and terminate unresponsive programs
The Task Manager utility in Windows provides real-time monitoring of running applications, background processes, system performance, and resource utilization. It enables users to view CPU, memory, disk, and network activity while providing tools to forcefully end unresponsive or frozen programs. Additionally, it helps monitor startup applications, active user accounts, and system service statuses across the machine.

22. (A) Power on → BIOS/POST → Bootloader → OS loaded into RAM
The system startup process follows a strict sequential sequence. When power is applied, the motherboard initializes the BIOS or UEFI to conduct a Power-On Self Test, verifying primary hardware integrity. Next, the system locates and executes the bootloader from secondary storage. Finally, the bootloader loads the operating system kernel into RAM to initialize system operations.

23. (B) An Administrator controls system settings, while a Guest has restricted access
An Administrator account possesses complete administrative rights over the operating system, including permissions to modify system settings, install software, manage security privileges, and control other user profiles. Conversely, a Guest account offers limited access meant for temporary visitors, preventing structural system modifications, access to private user data, software installations, or security configuration alterations.

24. (C) It reorganizes fragmented disk data to store files contiguously and improve speed
Disk Defragmenter is a system maintenance utility that reorganizes data blocks stored non-contiguously on magnetic hard disk drives. As files are saved, edited, or deleted, data becomes fragmented across disk sectors, slowing access times. By rearranging related file fragments into contiguous physical sectors, the defragmenter optimizes read-write speeds and improves overall system performance.

25. (D) Virtual Memory
Virtual memory is a memory management technique where the operating system allocates a designated section of secondary storage, such as a hard disk or solid-state drive, to simulate additional physical RAM. When physical memory fills up, inactive memory pages are temporarily transferred to this paging file on storage, allowing computers to run larger applications seamlessly.

26. (A) Command Line Interface
CLI stands for Command Line Interface. It represents a text-based user interface mechanism used for interacting with computer operating systems or applications. Users input specific commands into a terminal console, which are then processed sequentially by the system command

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interpreter. Although requiring precise command syntax knowledge, CLI provides efficient system management and scripting capabilities for advanced users.

27. (B) UNIX
macOS is built upon a Unix-based foundation known as Darwin, which incorporates components from BSD Unix and the Mach microkernel architecture. This Unix core provides macOS with high stability, advanced process management, robust file system permissions, and strong security characteristics. Consequently, macOS shares core terminal commands and POSIX standards common to Unix and Unix-like operating environments.

28. (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
Disk Cleanup is a valuable administrative system maintenance tool designed to recover secondary storage space on hard drives. It safely scans for and removes unnecessary data, such as temporary internet files, temporary system files, error logs, and items inside the Recycle Bin. Removing these redundant files optimizes available disk capacity, directly supporting regular computer system maintenance.

29. (A) System software enabling the operating system to communicate with hardware
A device driver is a specialized system software component that acts as a translator between the operating system and connected physical hardware devices. It translates generic system commands into specific control instructions understood by hardware devices like printers, graphics cards, and sound cards. Without appropriate drivers, the operating system cannot recognize or properly control hardware peripherals.

30. (C) Modifying system settings and hardware devices
The Windows Control Panel is a centralized administrative tool used to view, manage, and configure core system settings. It allows users to modify hardware preferences, adjust display properties, manage user accounts, configure network network settings, and uninstall application programs. While newer Windows versions incorporate the Settings app, Control Panel remains a key administrative interface for detailed system configuration.

31. (D) To boot the system with minimal drivers and services for troubleshooting
Safe Mode is a diagnostic startup state in Windows designed for system troubleshooting and resolving software conflicts. When booted in Safe Mode, the operating system loads using only essential core files, system services, and basic display drivers. This stripped-down environment helps isolate and resolve issues caused by unstable device drivers, software errors, or malware infections.

32. (A) P-2, Q-1, R-4, S-3
Operating system concepts address distinct functions: Booting initializes hardware and loads system software into RAM. Spooling temporarily holds output data, such as print tasks, in a disk buffer until target hardware is ready. Multitasking enables concurrent execution of multiple processing tasks. Paging manages system memory by retrieving fixed-size data blocks between secondary storage and main RAM.

33. (B) By opening the Recycle Bin, right-clicking the file, and choosing “Restore”
Files located inside the Windows Recycle Bin can easily be recovered to their original directory locations. Users open the Recycle Bin, locate the target file, open its context menu with a right-click, and choose the Restore option. This action moves the file out of the temporary Recycle Bin folder and returns it to its original path.

34. (D) Microsoft Excel
An operating system is essential system software that manages hardware and creates an environment for running software applications. Examples include Android, Linux distributions, and macOS. Microsoft Excel is an application software program specifically engineered for creating spreadsheets, performing mathematical computations, and analyzing data, operating on top of an operating system rather than functioning as one itself.

35. (A) Linux
Ubuntu and Fedora are popular Linux distributions built upon the open-source Linux kernel coupled with GNU software software suites and graphical desktop environments.

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preferences, making them ideal for shared or public computing environments.

54. (D) To scan, detect, and remove malicious software such as viruses and worms
Antivirus software is a security application designed to protect computer systems against malicious software threats, including computer viruses, worms, trojans, ransomware, and spyware. It continuously monitors file activity, scans system storage for known malware signatures, quarantines suspicious files, and removes digital security threats to maintain system integrity, data privacy, and overall operating performance.

55. (B) Oracle Database
Microsoft Windows 11, Linux Mint, and Google Android 14 are system operating systems designed to manage hardware resources and run applications across desktop, laptop, server, or mobile computing devices. Oracle Database is a database management system software package engineered for data storage, retrieval, and relational data management, functioning as application software rather than an operating system software layer.

56. (C) Operating System
During the system startup sequence, the bootloader retrieves the operating system kernel from non-volatile secondary storage and loads it into system RAM. As the primary software component, the operating system must initialize first to control hardware components, manage system memory, establish security frameworks, and construct the operational environment necessary for running secondary software applications like web browsers or word processors.

57. (D) I, II and III
Users interact with modern operating systems using multiple interface modes depending on hardware hardware capabilities and software requirements. Command Line Interfaces rely on text input, Graphical User Interfaces utilize windows, icons, and mouse pointers, and touch interfaces support direct gesture interactions on mobile screens. Operating systems adapt to these distinct input methods to provide seamless user interaction across computing devices.

58. (A) The computer saves its current state to RAM and enters a low-power state
When a Windows system enters Sleep mode, the operating system saves its current operating state, open applications, and unsaved documents into main RAM while placing system hardware components into a low-power consumption mode. This enables rapid resumption of full computer activity within seconds when awakened, maintaining active workspace configurations without going through a full system boot cycle.

59. (B) The device has a driver error or configuration issue
In the Windows Device Manager utility, a yellow exclamation mark icon positioned next to a listed hardware component indicates a operational problem or device driver error. This visual warning signifies missing drivers, driver corruption, hardware resource conflicts, or improper device initialization, alerting administrative users to troubleshoot, update, or reinstall the appropriate driver software for proper peripheral operation.

60. (B) Power-On Self Test
POST stands for Power-On Self Test. It is an automated diagnostic routine executed by the system BIOS or UEFI firmware immediately upon turning on a computer. The POST verifies that critical system hardware components, including main memory, processor chips, storage controllers, and system motherboards, are functioning correctly before attempting to initialize the operating system boot loader program.

61. (A) Linus Torvalds
Linus Torvalds created the Linux kernel in 1991 while studying at the University of Helsinki. He released the source code under open-source distribution terms, encouraging global developer collaboration. Today, his original kernel serves as the fundamental core engine powering numerous Linux distributions, cloud enterprise infrastructure, embedded devices, supercomputers, and the global Android mobile operating system platform.

62. (C) .apk
The standard file extension for installation packages on the Android operating system is .apk, which stands for Android Package. APK files are archive packages containing compiled

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and cluster organization. Variations such as FAT12, FAT16, and FAT32 served as standard file systems across early personal personal computing platforms and removable flash drives.

45. (A) New Technology File System
NTFS stands for New Technology File System, which serves as the default file system for modern Windows operating systems since Windows NT. NTFS provides significant improvements over legacy file systems like FAT32, including support for large storage volumes, file-level encryption, access control permissions, data journaling, file compression, and advanced metadata tracking for enhanced system security and reliability.

46. (A) 4, 3, 1, 2
To permanently delete a file in Windows without sending it to the Recycle Bin, the user first locates the item inside Windows File Explorer. Next, the user selects the file, presses the Shift and Delete keys together, and confirms the action by clicking Yes on the deletion prompt, permanently removing the file entry from the file system.

47. (D) It hides the file from standard folder views until system settings reveal hidden items
Setting a file attribute to Hidden in Windows prevents it from appearing in standard folder listings within File Explorer. This attribute is commonly applied to critical operating system files to protect them from accidental deletion or modification by users. Hidden files remain intact on disk storage and become visible only when folder view options are set to display hidden items.

48. (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
Multitasking operating systems enable users to run several applications concurrently, such as playing audio media while editing text documents. On single-processor hardware, this concurrency is accomplished through rapid context switching, where the operating system allocates CPU execution time slices between tasks so swiftly that it creates the illusion of simultaneous execution to the user.

49. (B) To set up a file system on the drive, erasing existing data in the process
Formatting a disk drive prepares a storage device for initial file storage by establishing a compatible file system format, such as NTFS or FAT32. This administrative process creates mandatory data structures, sector layouts, and directory tracks on the storage medium while erasing pre-existing files and references, making the volume ready for clean data storage by the operating system.

50. (D) /
In the Linux file system hierarchy, the forward slash symbol represents the root directory, serving as the top-level starting point for the entire folder structure. Unlike Windows systems that use drive letters like C:, Linux organizes all mounted storage devices, hardware directories, system files, and user directories as subdirectories extending directly or indirectly from this single root directory.

51. (A) Ctrl + Shift + N
In Windows File Explorer and on the desktop screen, pressing the keyboard shortcut Ctrl + Shift + N automatically creates a new, empty directory folder. This shortcut streamlines file organization by bypassing context menus, allowing users to rapidly generate and name new storage folders directly within their current working directory directory path.

52. (A) P-3, Q-2, R-4, S-1
Windows keyboard shortcuts enhance efficiency: Windows Key + D toggles desktop visibility. Windows Key + L locks the workstation screen to prevent unauthorized access. Windows Key + R launches the Run dialog box for executing system utilities and commands. Windows Key + I opens the system Settings application, allowing quick access to system configuration options.

53. (A) It provides temporary user access while preventing system modifications or software installation
A Guest account in an operating system offers restricted access for temporary users needing basic system entry. To maintain overall computer security and data integrity, Guest accounts are restricted from installing new software, modifying administrative system settings, accessing private user directories, or altering hardware hardware

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ANSWERS

1. (B) A system software that acts as an interface between the user and computer hardware
An operating system is a fundamental system software program that manages computer hardware and software resources. It serves as an intermediary bridge between human users and the physical machinery, translating user instructions into machine language. Furthermore, it provides a stable environment for application programs to execute efficiently while controlling resource allocation, process scheduling, memory management, and file storage.

2. (D) Internet Browsing
Primary functions of an operating system involve core resource management tasks such as processor allocation, memory tracking, file organization, and input or output device control. Internet browsing is an application-level activity performed using specialized application software like web browsers. The operating system provides the underlying environment to run browsers but does not inherently function as a web browser itself.

3. (A) GUI relies on visual elements like windows and icons, whereas CLI requires typing text commands
A graphical user interface allows users to interact with the computer using visual elements such as icons, buttons, menus, and windows, typically controlled with a pointing device. Conversely, a command line interface requires users to manually enter specific text-based commands into a prompt terminal. Graphical interfaces prioritize user accessibility, whereas command interfaces offer rapid execution for advanced users.

4. (D) I, II and III
Cold booting occurs when starting a computer system from an entirely powered-off condition by toggling the physical power switch. Warm booting refers to restarting the operating system electronically without interrupting the main electrical power supply. Both procedures ultimately transfer the core operating system software from non-volatile secondary storage into high-speed random access memory for execution and active system operation.

5. (A) MS-DOS
MS-DOS is a classic command-line operating system designed to handle one user session and execute a single task at any given moment. It lacks background processing capabilities and multi-threading architecture. Modern operating systems like Windows, macOS, and Linux are designed with multitasking and multi-user capabilities, allowing multiple applications to run concurrently while supporting concurrent or distinct user profiles.

6. (D) Graphical User Interface
GUI stands for Graphical User Interface. It represents a visual system interface that enables users to interact with electronic devices through graphical icons, visual indicators, windows, and pointer controls. This design replaces traditional text-based command lines with accessible visual representations, significantly simplifying navigation, application management, and overall user interaction across personal computers, smartphones, and various digital computing hardware devices.

7. (B) Linux
Linux is an open-source operating system whose underlying source code is freely available to developers worldwide for inspection, modification, and redistribution. Proprietary operating systems such as Microsoft Windows, macOS, and iOS keep their internal source code secret and restricted under strict commercial software licensing agreements, preventing public distribution, unauthorized code modifications, or custom developer reconfigurations without explicit authorization.

8. (B) At the bottom of the screen
In the Microsoft Windows operating system, the taskbar is positioned along the bottom edge of the desktop screen by default. It contains key navigational elements including the Start menu button, pinned application shortcuts, currently open program windows, and the system notification area. Users can customize its position

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Java or Kotlin code, application resources, assets, manifest files, and security certificates necessary to install applications directly onto Android devices, functioning similarly to .exe setup installers on Windows platforms.

63. (D) Apple App Store
Users on the Apple iOS mobile operating system download and install mobile applications primarily through the Apple App Store. Apple enforces a centralized software distribution ecosystem on iOS, requiring all third-party application software to undergo security verification and policy review before being published on the App Store, ensuring software compatibility, data security, and platform stability across iPhone hardware.

64. (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
Linux is defined as an open-source operating system because its underlying kernel source code is published openly under licenses such as the GNU General Public License. This open accessibility grants developers, organizations, and end users total freedom to inspect, edit, modify, optimize, and redistribute the software code, perfectly explaining why Linux is classified as open-source software.

65. (B) CLI
The Windows Command Prompt is an explicit implementation of a Command Line Interface. It provides a text-based terminal environment where users type system commands, execution scripts, and directory instructions to manage system settings, execute files, and perform file system operations directly, operating without graphical user elements like graphical windows, interactive buttons, or visual mouse pointers.

66. (D) Basic Input Output System
BIOS stands for Basic Input Output System. It represents low-level firmware stored on a ROM chip on the computer motherboard. BIOS performs hardware initialization during the startup sequence, executes the Power-On Self Test, and identifies bootable storage drives containing the operating system bootloader to initiate the operating system loading process into main RAM.

67. (B) I, II and III
Windows File Explorer is a file management application used to organize file system directories. Users can easily create new folders, rename files, and modify file extensions within Explorer interface views. Upgrading CPU physical hardware requires manual hardware replacement inside the system casing, an operation outside the functional capabilities of file management software applications like Windows Explorer.

68. (C) Moving relocates the file, whereas copying duplicates it at the destination
Moving a file transfers the file entry from its original folder location to a new target path, leaving no copy behind in the source directory. Conversely, copying a file creates an exact duplicate at the destination directory path while maintaining the original intact in its source location, allowing users to replicate content without losing original files.

69. (A) Hold Shift, click the first file, then click the last file
To select a continuous group of sequential files in Windows File Explorer, users click the first desired item in the directory, hold down the Shift key on the keyboard, and click the final item in the sequence. This action automatically highlights and selects all items located between the initial and final file choices instantly.

70. (D) Hold the Ctrl key and click each desired file
Selecting non-continuous, non-sequential files inside a folder is accomplished using the Control key. Users hold down the Ctrl key continuously on the keyboard while individual items are left-clicked using the mouse. This technique allows selective highlighting of multiple distinct files located across a directory without selecting unneeded intermediate files in the folder view.

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71. (B) Window
In graphical operating system environments, a window is a rectangular screen area that displays the user interface for a specific application program or directory path. Windows can be minimized, maximized, resized, or moved across the desktop interface, allowing users to view and interact with multiple running software programs concurrently within a structured workspace.

Because the Linux kernel is open-source, various organization entities and community groups package it with distinct system tools, package managers, and user interfaces to create tailored distributions catering to desktop, server, and enterprise environments.

36. (C) I and II only
Android is an open-source mobile operating system based on a modified Linux kernel. Developed under the leadership of Google, it is engineered primarily for mobile touchscreen computing devices like smartphones and tablets rather than traditional desktop environments. It offers customizable user interfaces, application management frameworks, and extensive software ecosystems tailored specifically for portable handheld consumer electronic hardware.

37. (A) Backslash (\)
The Microsoft Windows file system uses the backslash character as a directory path separator to divide folders and subfolders in file path locations. In contrast, Unix-like operating systems such as Linux and macOS utilize the forward slash character for directory navigation paths. Understanding these path separator conventions is vital when managing file paths across different computing platforms.

38. (D) Assigning fixed time slices to tasks in a round-robin schedule
A time-sharing operating system employs CPU scheduling algorithms to allocate fixed, equal time slices to multiple active processes sequentially. By rapidly switching CPU execution among tasks using round-robin scheduling, each connected user receives continuous computational focus. This rapid context switching creates the illusion that all programs are running simultaneously, maximizing interactive multi-user workstation efficiency.

39. (B) System Software
Operating systems belong to the category of system software, which serves as the foundational layer between physical hardware and application software. Unlike application software designed for end-user productivity tasks, system software manages internal computer operations, coordinates hardware devices, manages system memory, handles file systems, and creates a platform required for running all secondary software applications.

40. (C) Ctrl + Alt + Delete
Pressing Ctrl + Alt + Delete on a Windows computer invokes a hardware interrupt that brings up the Windows Security screen. This screen grants immediate user access to essential administrative functions, including launching the Task Manager, locking the workstation, switching user profiles, signing out, or changing user account passwords, providing a secure method to interrupt system processes.

41. (D) To filter incoming and outgoing network traffic using predefined security rules
A firewall in an operating system functions as a critical network security component that monitors and controls network traffic based on predefined security rules. It inspects data packets attempting to enter or leave the system, blocking unauthorized network connections, cyber threats, and malicious external access while permitting legitimate, verified communication across local networks and the internet.

42. (A) To patch security bugs and improve system stability
Regularly updating an operating system is essential for maintaining robust computer security, system stability, and optimal performance. Software updates deliver security patches that fix vulnerabilities, close security flaws targeted by malware, resolve bug defects, and enhance software compatibility with new hardware peripherals. Failing to install updates leaves computer systems vulnerable to cyber exploitation and unexpected system crashes.

43. (A) I, II and III
Core operating system functions include memory management, file and directory organization, input-output device handling, process scheduling, and providing user interfaces like GUIs or command lines. Compiling Java source code into bytecode is performed by specialized software compilers such as the Java Development Kit compiler, which operates as an external development tool rather than a standard operating system feature.

44. (B) File Allocation Table
FAT stands for File Allocation Table, an older file system architecture originally developed by Microsoft for disk storage management. It maintains an index table on storage media to track physical sector allocations, file locations,

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Start button in Windows 8.1 and a unified Start menu structure in Windows 10.

82. (D) Auto-hide the taskbar
The Auto-hide taskbar feature in Windows automatically conceals the desktop taskbar off-screen when it is not actively being used, maximizing screen space for running software applications. Hovering or touching the mouse cursor along the designated screen edge instantly brings the hidden taskbar back into view, allowing quick access to system icons and applications.

83. (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
Device drivers are essential software components required for physical hardware peripherals to work correctly with operating systems. They function as software translators, accepting high-level operating system commands and converting them into low-level instructions specific to hardware devices like printers or display adapters, demonstrating why proper drivers are vital for system operation.

84. (C) To revert system files, registry settings, and programs to a previous restore point
System Restore is a recovery tool in Microsoft Windows that enables users to revert system files, registry entries, and installed applications to an earlier point in time, known as a restore point. This utility helps repair software instability or driver conflicts without affecting personal user files like documents, spreadsheets, digital photographs, or media library collections.

85. (A) Temporary system files, web cache, and Recycle Bin items
The Disk Cleanup utility in Windows scans system storage drives to identify and remove unneeded temporary files. It cleans out temporary internet files, system error reports, thumbnail cache files, setup logs, and deleted items inside the Recycle Bin, freeing up storage capacity on the hard drive without deleting user documents, media files, or critical programs.

86. (D) Dividing memory into fixed-size blocks called pages for allocation
Paging is a fundamental memory management technique where physical memory and virtual memory address spaces are divided into fixed-size blocks called pages and frames. The operating system uses paging to allocate memory efficiently, transfer data blocks between secondary storage and primary RAM, and prevent external memory fragmentation without requiring programs to reside in contiguous physical memory.

87. (A) I, III and IV
Virtual memory uses secondary storage disk space to simulate main system memory, enabling computers to run large programs that exceed physical RAM limits. When physical memory becomes full, inactive memory pages are swapped out to virtual memory disk files, though virtual memory does not alter or physically expand installed hardware RAM capacity on the motherboard.

88. (C) Kernel
The kernel is the core central component of the Linux operating system, operating with full hardware hardware privileges. It directly manages hardware resources, controls memory allocation, handles central processor scheduling, manages input and output signals, and provides essential low-level services to background system services and foreground user application software applications running within system memory.

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89. (D) Command Line Interface (CLI)
MS-DOS operates primarily through a text-based Command Line Interface where users execute system utilities, manage directories, and launch programs by typing text commands into a command prompt terminal. It lacks built-in visual elements such as graphical windows, visual mouse pointers, desktop desktop icons, or touch inputs that define modern graphical user interface operating environments.

90. (A) C
The UNIX operating system was re-written in the C programming language by Dennis Ritchie and Ken Thompson at Bell Labs during the early 1970s. Writing UNIX in C was a revolutionary milestone, making the operating system portable across different hardware platforms with minimal code adjustments, rather than restricting it to specific assembly language processor hardware architecture.

91. (B) Sweet treats and desserts
Historically, Google named major versions of the Android mobile operating system in alphabetical sequence after sweet treats and desserts. Famous

historical release version names include Cupcake, Donut, Eclair, Froyo, Gingerbread, Honeycomb, Ice Cream Sandwich, Jelly Bean, KitKat, Lollipop, and Marshmallow, a naming tradition that continued until Android transitioned to numerical naming starting with Android 10.

92. (A) P-2, Q-3, R-4, S-1
Mobile operating systems were developed by major tech corporations: Apple created iOS exclusively for its iPhone devices. Huawei introduced HarmonyOS as a cross-device operating system platform. BlackBerry created BlackBerry OS for its enterprise handheld devices. Microsoft developed Windows Phone as a specialized smartphone platform based on Windows operating system technologies.

93. (A) To request user approval before software makes system changes
User Account Control is a core Windows security feature that prevents unauthorized administrative modifications to the system. Whenever software programs attempt to install applications, alter system configuration settings, or modify critical system directories, UAC presents a security prompt asking the user for explicit administrative confirmation before granting execution permission to proceed with the action.

94. (C) Context menu
A context menu is a pop-up graphical menu that appears when a user performs a right-click action on a specific file, directory, or visual screen element. It presents a list of commands, shortcuts, and options relevant directly to the selected object, such as copy, paste, delete, rename, or properties settings within the graphical interface.

95. (D) Windows Key + M
Pressing the Windows Key in combination with M minimizes all open windows on the desktop display screen, revealing the underlying workspace desktop interface. Alternatively, pressing Windows Key + Shift + M restores the minimized windows back to their previous display positions, providing efficient workspace window management across active application sessions.

96. (C) The file can be opened and read, but modifications cannot be saved to it
Setting a file property to Read-only grants permissions to view, open, and read file contents while blocking users or software from saving modifications back to the original file. To preserve edits, users must save the modified file under a different filename or target path, protecting original file data from accidental overwritten changes.

97. (B) Question mark (?)
The Microsoft Windows file system reserves specific wildcard and system characters, prohibiting them from being used inside file or folder names. Reserved characters include the question mark, asterisk, forward slash, backslash, colon, quotation marks, less-than symbol, greater-than symbol, and pipe character, as these symbols hold special operational functions within command command shell scripts.

98. (D) Real-Time Operating System
RTOS stands for Real-Time Operating System. It is an operating system optimized to process data and execute system tasks within precise timing constraints. RTOS architectures focus on low latency, deterministic execution predictability, and rapid response times to external hardware interrupts, making them essential for specialized embedded systems, industrial automation, robotics, and medical devices.

99. (B) I and II only
Real-Time Operating Systems are critical in time-sensitive environments like air traffic control communication and medical life support devices, where operational delays can lead to catastrophic hardware failure or loss of life. Word processing applications do not require strict real-time determinism, operating comfortably on standard general-purpose desktop operating systems like Microsoft Windows or macOS.

100. (C) Using physical punched cards or magnetic tapes
In early batch processing operating systems, computer programmers entered software programs and computational data using physical punched cards or magnetic tapes. Operators collected these media batches, loaded them sequentially into mainframe readers, and processed the job queues without interactive user communication, as interactive graphical

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screens and desktop keyboards had not yet been developed.

101. (A) MS-DOS
MS-DOS is a single-user, text-based desktop operating system developed for early personal computers, lacking native mobile device interfaces or power management frameworks. In contrast, Android, iOS, and Symbian were designed specifically as mobile operating systems, offering specialized software architectures for touch interfaces, wireless connectivity, and cellular telephone communication hardware peripherals.

102. (D) On the primary hard disk drive or solid-state drive
When a Windows PC enters Hibernate mode, the operating system writes the current contents of system RAM, including all open files, running applications, and system states, into a hidden system file on the main secondary storage drive. Power is then completely turned off, allowing full workspace restoration upon rebooting the system.

103. (B) An antivirus and security utility
Windows Defender is an integrated security feature built directly into Windows 10 and 11, serving as a comprehensive real-time antivirus and antimalware utility. It scans files and internet downloads, monitors background process execution, blocks unauthorized intrusion attempts, and updates malware definitions automatically to protect the operating system against digital viruses, trojans, and security threats.

104. (C) Plug and Play
Plug and Play describes the operating system capability to identify, configure, and initialize hardware devices automatically upon connection. When a user connects a Plug and Play peripheral, such as a USB flash drive, mouse, or keyboard, the operating system detects the device, loads the required driver software, and prepares it for immediate use without manual user configuration.

105. (B) I, II and IV
Open-source operating systems distribute their source code freely to the public, allowing users to view, modify, compile, and redistribute the software without cost. Linux serves as the prime example of open-source software, encouraging community collaboration. These systems are free from installation restrictions on multiple systems, rendering claims of legal multi-computer restrictions incorrect.

106. (A) A temporary buffer holding cut or copied data
The Clipboard is a temporary memory buffer maintained by the operating system to hold data selected during cut or copy operations. When users copy text, images, or files, the data is held in the Clipboard, allowing it to be pasted into another document, folder location, or application program across active user software sessions.

107. (B) Drag and Drop
Drag and Drop is an interactive pointing action in graphical user interfaces. A user selects a visual screen object like a file icon using a mouse or touchpad, holds down the primary click button, moves the pointer to a target folder or window location, and releases the button to relocate, copy, or open the item instantly.

108. (B) Question mark symbol (?)
In Windows search and file system commands, the question mark symbol functions as a single-character wildcard. It replaces exactly one unknown character in a file search query, allowing users to search for filenames where a specific letter or number varies while keeping the remaining character positions constant across the directory search path.

109. (A) Asterisk (*)
The asterisk symbol acts as a multi-character wildcard in Windows file search operations and command prompts. It represents zero, one, or multiple unknown characters within a file search string, enabling users to locate files with common extensions or patterns regardless of total character length or specific naming structures inside storage directories.

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110. (B) On the far right of the taskbar
The System Tray, also known as the notification area, is situated at the far right corner of the Windows taskbar. It displays system status indicators, including the digital clock, network connection icons, audio volume controls, background utility software icons, and system notification alerts, keeping essential system information easily accessible to the user.

111. (D) Restart reboots the OS immediately, while Shut Down turns off power
Shut Down completely closes all running applications, logs off active user sessions, saves system state, and terminates power delivery to computer hardware components. Conversely, Restart closes open programs and shuts down the operating system before immediately powering hardware back up to reload the system, making it essential for applying updates and resolving minor system glitches.

112. (C) Apple
Apple popularized graphical user interfaces for personal computers with the release of the Macintosh in 1984. While initial GUI concepts were developed at Xerox PARC, Apple successfully commercialized the visual desktop interface, featuring windows, visual application icons, drop-down menus, and mouse controls, setting the structural standard for personal computer user interfaces globally.

113. (B) DIR
In MS-DOS, internal commands are built directly into the command interpreter file, COMMAND.COM, and reside constantly in RAM while the system is active. The DIR command is an internal command used to display directory file lists. External commands, such as FORMAT, CHKDSK, or XCOPY, exist as standalone executable files on secondary disk storage.

114. (D) A command stored in a separate executable file on disk
An external command in MS-DOS refers to a system utility command stored as an independent executable program file on secondary storage media rather than being loaded directly into COMMAND.COM memory. When executed, the operating system reads the corresponding executable file from disk into RAM, processes the requested system routine, and releases the allocated application memory space.

115. (A) Application Programming Interface
API stands for Application Programming Interface. In operating systems, an API provides a structured set of routine definitions, communications protocols, and function calls that allow application software developers to request underlying system services, such as file management, memory allocation, and hardware access, without needing to program low-level hardware control code directly.

116. (C) Multiprocessing utilizes multiple CPUs, while multitasking uses one CPU to handle concurrent tasks
Multiprocessing involves using two or more physical processors or processing cores to execute instructions simultaneously across multiple hardware CPUs. Multitasking describes the operating system's capability to manage multiple tasks concurrently on a single CPU by rapidly dividing execution time into small time slices, creating the appearance that multiple programs are executing at the same time.

117. (A) Operating System
An operating system is the mandatory software layer required to initialize system hardware, manage main memory, coordinate input and output devices, and provide an execution platform for running applications. Without a functional operating system loaded, a computer cannot initialize user session interfaces or execute applications, rendering hardware machinery unusable during the booting process.

118. (D) Open Source
The open-source model guarantees that software source code is published openly, allowing users to view, inspect, modify, and distribute the program without restriction. Open-source licensing fosters global developer collaboration, enhances security through public code audits, and empowers organizations to customize operating system software features to meet tailored operational requirements across different computing environments.

119. (B) A Tux Penguin mascot
Tux, a friendly penguin character, serves as the official brand mascot for the Linux operating system kernel. Created by Larry Ewing in 1996 following suggestions by Linus Torvalds, Tux represents Linux across global software developer communities, open-source documentation, software distributions, tech conferences, and official branding materials associated with Linux operating systems worldwide.

120. (C) Microsoft Edge
Microsoft Edge serves as the default built-in web browser pre-installed across modern Windows 10 and Windows 11 operating systems. Replaces

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the legacy Internet Explorer browser, Microsoft Edge is built upon the open-source Chromium engine, delivering enhanced web standards compliance, improved browsing speeds, robust system security features, and deep integration with Microsoft ecosystem services.

121. (D) Subfolder
A folder stored inside another folder within a directory structure is known as a subfolder or subdirectory. File systems use hierarchical tree structures to organize stored data logically, where top-level parent directories contain nested subfolders to group related files together, streamlining directory navigation and file access across secondary storage media.

122. (A) A dot or period (.)
In computer file systems, a period or dot symbol acts as the delimiter separating a file's primary name from its file extension. The character sequence following the period identifies the file format, such as document.txt or image.jpg, enabling operating systems to determine how to handle the file and assign appropriate default viewing software applications.

123. (C) 260 characters
In standard legacy Windows API configurations, the maximum path length limit for files and directories is set to 260 characters, defined by the MAX_PATH structural constant. This limit includes drive letters, folder directory structures, file names, and trailing null characters, though modern Windows versions allow administrators to remove this limit using specific system registry configurations.

124. (B) A small desktop link pointing to an item located elsewhere
A shortcut icon on the Windows desktop is a small pointer link that references an executable file, document, or directory folder stored elsewhere on secondary storage. Displaying a small arrow overlay on its icon, deleting a desktop shortcut removes only the pointer link itself, leaving the target file untouched in its original storage directory.

125. (A) User Account Control
UAC stands for User Account Control. It is a fundamental security architecture introduced in Windows Vista and retained in modern Windows versions. UAC restricts application software to standard user privileges until an administrator explicitly authorizes elevated permissions, preventing unauthorized malware installations, silent system configuration changes, and unwanted administrative system security breaches.

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126. (C) NTFS supports larger files, larger volumes, and advanced security
NTFS is preferred over FAT32 in modern Windows operating systems because it overcomes legacy FAT32 limitations. Unlike FAT32, which caps individual file sizes at four gigabytes, NTFS supports massive files and storage volumes, file-level security permissions, disk quotas, file compression, file encryption, and journaling features that safeguard data integrity against system crashes.

127. (D) It allocates CPU time fairly among multiple simultaneous users
The principal advantage of a time-sharing operating system is its ability to allocate CPU processing time fairly among multiple simultaneous users and tasks. By assigning small time slices through rapid round-robin scheduling, each connected user experiences continuous system responsiveness, maximizing central processor utilization and enabling interactive multi-user computing environments without noticeable operational delays.

128. (C) 1985
Microsoft officially released Windows 1.0 in November 1985 as a graphical personal computer operating environment running on top of MS-DOS. Windows 1.0 introduced graphical user interface elements to DOS users, including tiled windows, basic visual desktop utilities, and mouse cursor support, marking Microsoft's first step toward modern window-based operating systems.

129. (B) Root
In Linux and Unix-like operating systems, root is the default system administrative user account holding unrestricted system privileges. The root user account possesses complete control over the system, allowing access to all files, execution of administrative commands, management of user accounts, modification of core system configurations, and installation or uninstallation of software packages.

II. Instagram Stories permanently stay on the user's profile unless deleted.
III. Instagram allows users to message each other directly.
Which of the above statements is/are incorrect?
(A) I only
(B) II only
(C) I and III
(D) II and III

21. By what name did Elon Musk rebrand the social networking platform Twitter in 2023?
(A) V
(B) X
(C) Y
(D) Z

22. What does End-to-End Encryption mean in the context of messaging apps like WhatsApp?
(A) Messages are automatically scanned and indexed by the platform service provider in order to deliver highly targeted commercial advertisements
(B) Messages are retained in plain, unencrypted text format on central corporate servers to ensure seamless cloud backup and rapid retrieval
(C) Messages can only be transmitted and received between two mobile devices running identical operating systems and hardware configurations
(D) Only the communicating sender and receiver can access message contents, preventing interception by third parties or the service provider

23. Identify the odd one out in terms of its primary platform type.
(A) WhatsApp
(B) YouTube
(C) Telegram
(D) Signal

24. What is the fundamental difference between a WhatsApp Group and a WhatsApp Broadcast List?
(A) In a WhatsApp Group, recipient identities remain strictly hidden from all participants, whereas in a Broadcast List, everyone views member details
(B) WhatsApp Groups are restricted to a maximum capacity of ten users, whereas Broadcast Lists offer unlimited membership capacity for messages
(C) In a Broadcast List, messages deliver as private individual chats where recipients cannot see each other, unlike interactive WhatsApp Groups
(D) WhatsApp Broadcast Lists require an active monthly premium subscription fee, whereas traditional WhatsApp Groups are entirely free to use

25. Select the correct chronological order of the initial public launch of the following platforms from oldest to newest.
(A) Facebook, Instagram, LinkedIn, Telegram
(B) LinkedIn, Facebook, Instagram, Telegram
(C) Instagram, Facebook, LinkedIn, Telegram
(D) Facebook, LinkedIn, Telegram, Instagram

26. What is the purpose of using a hashtag (#) in a social media post?
(A) To categorize content by topic or keyword, facilitating easier discovery and search
(B) To apply end-to-end cryptographic encryption to protect message contents from unauthorized access
(C) To restrict post visibility exclusively to approved account followers while hiding it from general search
(D) To flag and notify platform security software that the post contains a malicious computer virus download

27. When a user on X (formerly Twitter) shares someone else's post with their own followers, what is this action called?
(A) Poking
(B) Reposting (Retweeting)
(C) Archiving
(D) Blocking

28. In software integration between websites and social media platforms, what does the abbreviation API stand for?
(A) Advanced Protocol Integration Framework
(B) Application Programming Interface
(C) Automated Posting Integration System
(D) Access Point Interconnection Protocol

29. On LinkedIn, what does it mean if another user is listed as a 2nd-degree connection?
(A) You share a mutual connection with them
(B) You are directly connected to them
(C) They work in the same company as you but in a different country
(D) They have blocked your profile

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140. (B) It manages hardware resources and provides a platform for running user programs
The primary role of an operating system in daily computer use is to manage hardware resources, including CPU, memory, storage, and peripheral devices, while providing a stable execution platform for running user application software. It acts as an intermediary layer, enabling users and applications to interact seamlessly with physical computer hardware machinery.

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130. (D) Performance monitor tab
The Performance tab in the Windows Task Manager provides real-time graphical graphs monitoring core hardware resource usage. Users can observe real-time metrics for CPU usage, physical memory allocation, disk read and write activity, network data throughput, and GPU utilization, assisting system administrators and users in identifying resource bottlenecks and monitoring operational efficiency.

131. (A) Virtual Memory Manager
VMM stands for Virtual Memory Manager. It is a critical subsystem component inside the operating system kernel responsible for supervising virtual memory operations. The VMM manages address translation between virtual memory addresses and physical RAM locations, handles page swapping between RAM and disk paging files, and ensures memory space isolation between running processes.

132. (C) To manage applications that run automatically at Windows startup
The Startup tab in the Windows Task Manager allows users to view and control software applications that launch automatically when the operating system boots up. Managing these startup programs enables users to disable unnecessary background processes, reduce boot times, free up memory resources, and improve overall system boot performance.

133. (A) Disk Defragmenter utility
Disk Defragmenter is an essential system utility software program designed to maintain drive performance by reorganizing fragmented data blocks on storage drives. System utilities support operating system maintenance, unlike application software software programs such as photo editors, media players, or presentation tools engineered specifically to perform end-user productivity tasks.

134. (D) Standard Account
A Standard Account is recommended for daily computer usage to maintain robust system security. Standard user accounts provide access to general applications and personal settings while restricting permissions to install software, alter system files, or change security configurations, thereby shielding the operating system from unauthorized security changes or malicious software infections.

135. (B) Task Manager
When a software application freezes or stops responding in Windows, the Task Manager utility provides the most direct solution. Users can open Task Manager, identify the unresponsive application process under the active processes list, and click the End Task button to terminate execution forcefully, freeing up locked system resources without requiring a reboot.

136. (C) The File System
The file system is the core operating system component responsible for structuring, organizing, storing, and retrieving files on storage media. It manages directory hierarchies, tracks file physical storage sector locations, stores file metadata, and enforces access control permissions, ensuring data remains structured, searchable, and secure across secondary storage hard drives and solid-state drives.

137. (D) It expands the total physical hardware RAM capacity of the computer
Having multiple user accounts on an operating system provides customized user settings, protects user file privacy through permission boundaries, and improves security by limiting administrative privileges. However, creating additional user accounts is a logical software configuration that cannot physically alter hardware hardware components or expand the installed physical RAM capacity of the computer.

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138. (A) Blue Screen of Death (BSOD)
The Blue Screen of Death, officially known as a Stop Error screen, appears in Microsoft Windows when the operating system encounters a critical kernel error from which it cannot safely recover. It displays diagnostic error codes and halts system processing to protect hardware hardware devices and prevent further storage data corruption.

139. (B) To display a menu for selecting which OS to boot at startup
In a dual-boot or multi-boot computer setup, the boot manager, such as GRUB or Windows Boot Manager, executes immediately after BIOS or UEFI initialization. It displays a startup menu listing installed operating systems, allowing the user to select which operating system to load into main memory for that session.

up bulletin board systems.
II. High-speed broadband and mobile internet accelerated social media adoption.
III. Social media platforms only became popular after 2015.
IV. The integration of cameras into smartphones boosted platforms like Instagram.
Which of the above statements are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

11. Who among the following is a co-founder of Facebook?
(A) Bill Gates
(B) Mark Zuckerberg
(C) Steve Jobs
(D) Larry Page

12. On Twitter (now X), what is a post published by a user traditionally called?
(A) A pin
(B) A tweet
(C) A snap
(D) A story

13. Which major social networking platform is primarily built around sharing photos and short videos, and uses filters to enhance media?
(A) Instagram
(B) LinkedIn
(C) Telegram
(D) WhatsApp

14. What is the primary target audience and purpose of LinkedIn?
(A) Teenagers and young adults sharing temporary self-deleting personal photos
(B) Video gamers broadcasting live streams of their interactive gameplay online
(C) Professionals seeking professional networking, job searching, and career growth
(D) Local community members buying and selling second-hand physical merchandise

15. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): LinkedIn is widely used by companies for recruitment and talent acquisition.
Reason (R): Users on LinkedIn maintain profiles that act as digital resumes detailing their skills and work experience.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

16. In 2014, WhatsApp was acquired by which major technology company?
(A) Google
(B) Microsoft
(C) Facebook (Meta)
(D) Apple

17. Which feature is highly prominent in Telegram that allows broadcasting messages to an unlimited number of subscribers?
(A) Telegram Pages
(B) Telegram Channels
(C) Telegram Boards
(D) Telegram Timelines

18. What happens to a message sent using the Disappearing Messages feature on platforms like WhatsApp?
(A) It gets permanently pinned to the very top section of the ongoing chat window
(B) It is automatically forwarded to the user's registered email address as a backup
(C) It becomes fully indexed and visible to public internet search engine crawlers
(D) It is automatically removed and deleted from the chat after a specified duration

19. On Facebook, what is the primary difference between a Profile and a Page?
(A) Profiles represent individual personal accounts, whereas Pages are meant for businesses, brand organizations, and public figures
(B) Profiles are created exclusively for registered commercial businesses, whereas Pages are designed for individual personal users
(C) Profiles demand a mandatory monthly paid subscription, whereas Pages are offered completely free of charge to all members
(D) Profiles are strictly prohibited from uploading photo content, whereas Pages possess full media publishing capabilities

20. Consider the following statements regarding Instagram features:
I. Instagram Reels are short, entertaining videos.

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CHAPTER 13
Social Networking

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1. Which of the following best defines a social networking service?
(A) A software used exclusively for editing offline documents
(B) An online platform used to build social relations with other people who share similar personal or career interests
(C) A hardware device used to connect computers in a local area network
(D) An antivirus program designed to protect computers from malware

2. Which platform is widely considered to be the first recognizable social networking site, launched in 1997?
(A) Facebook
(B) MySpace
(C) Orkut
(D) SixDegrees

3. Which of the following is not generally classified as a social networking or messaging platform?
(A) Mozilla Firefox
(B) Instagram
(C) LinkedIn
(D) Telegram

4. What is the primary characteristic of the Web 2.0 era that facilitated the rise of social networking?
(A) Static, read-only web pages
(B) Text-based browsers without image support
(C) User-generated content and interoperability
(D) Decentralized blockchain databases

5. In the context of the internet, what does the abbreviation SNS stand for?
(A) Social Networking Site
(B) Secure Network System
(C) Simple Node Server
(D) Systematic Network Software

6. Which of the following correctly describes a microblogging platform?
(A) A dedicated platform designed exclusively for uploading video files over ten minutes long
(B) A corporate database management system utilized specifically for enterprise inventory tracking
(C) An operating system utility program responsible for organizing and managing local file directories
(D) A social platform where users broadcast short text updates alongside optional media and links

7. Identify the odd one out among the following based on their primary function.
(A) Facebook
(B) Microsoft Excel
(C) Instagram
(D) Twitter

8. Which of the following is the most significant benefit of social networking sites for a general user?
(A) Creating and deploying complex software applications without writing code
(B) Increasing the physical random-access memory capacity of a smartphone
(C) Connecting and communicating with friends and family across the globe
(D) Generating renewable electrical energy through server data center networks

9. What is the main purpose of the timeline or news feed on a social networking platform?
(A) To display the complete underlying source code and technical architecture of the website
(B) To serve continuously as an interactive digital clock and personal calendar for the user
(C) To automatically purge and permanently delete older direct messages from the database
(D) To show a dynamically updated stream of posts and updates from connected users and pages

10. Consider the following statements regarding the emergence of social media platforms:
I. Early social networks relied heavily on dial-

30. Match the social media platform in List I with its prominent characteristic in List II.
List I: Platform
P. Facebook
Q. WhatsApp
R. LinkedIn
S. Instagram
List II: Characteristic
1. Professional networking and resumes
2. End-to-end encrypted instant messaging
3. Largest general social network with friends and pages
4. Visual platform focusing on photos, reels, and stories
(A) P-3, Q-2, R-1, S-4
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-4, S-1

31. Which of the following is a major advantage of Telegram over traditional SMS messaging?
(A) Telegram requires no active internet or cellular data connection to send messages anywhere globally
(B) Telegram comes permanently pre-installed on all modern smartphone models and cannot be uninstalled
(C) Telegram relies on physical postal delivery service networks to dispatch unreceived offline messages
(D) Telegram supports the seamless exchange of large media files alongside cloud-based message storage

32. Which of the following statements about Instagram is incorrect?
(A) Instagram allows users to upload multiple photos in a single post called a carousel.
(B) Users can apply digital filters to their photos before posting.
(C) Instagram does not allow users to send private messages.
(D) Instagram Live allows users to stream video in real-time.

33. On most social media platforms, for how long does a Story typically remain visible to followers before automatically disappearing?
(A) 1 hour
(B) 12 hours
(C) 24 hours
(D) 7 days

34. What does it mean to pin a message in a Telegram channel or a WhatsApp chat?
(A) To permanently erase and purge it completely from the shared group chat history log
(B) To automatically translate its content into another user's preferred local language
(C) To submit a formal abuse report regarding the message to platform administrators as spam
(D) To fix it at the very top section of the chat window for quick visibility by all members

35. The parent company Meta owns which of the following groups of platforms?
(A) Facebook, Instagram, WhatsApp
(B) Facebook, X (Twitter), LinkedIn
(C) YouTube, Instagram, and Telegram
(D) WhatsApp, Telegram, and Signal

36. What is InMail on the LinkedIn platform?
(A) A built-in webmail client integrated into the platform designed to completely replace personal Gmail accounts
(B) An automated cloud-based security tool that scans all user attachments for harmful computer malware and viruses
(C) A paid premium feature enabling direct messages to be sent to LinkedIn members without a prior connection
(D) A daily corporate newsletter delivered to every registered user inbox by the social network's chief executive

37. What does a blue checkmark badge next to an account name generally signify on platforms like Instagram and X?
(A) The account is authentic and verified
(B) The account is new and under observation
(C) The account has been suspended for violating rules
(D) The account belongs to a computer bot

38. The character limit for a standard free-tier post on X (formerly Twitter) was historically increased from 140 characters to what number?
(A) 200
(B) 256
(C) 280
(D) 500

39. What is a primary privacy risk associated with using public, unsecured Wi-Fi to access social media accounts?
(A) It permanently degrades the display

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administrators
(B) Press the like button to draw attention to the post
(C) Reply directly to the author using personal insults
(D) Save and download the media files to local storage

107. What is the difference between blocking a user and reporting a user?
(A) Reporting immediately deletes a user's account from servers, whereas blocking temporarily suspends communication privileges for twenty-four hours
(B) Blocking prevents direct contact between users, whereas reporting alerts platform moderators to review flagged account behavior against guidelines
(C) Blocking requires an active monetary transaction fee, whereas submitting an administrative misconduct report is offered entirely free of charge
(D) There is no functional distinction between the two features; blocking and reporting execute identical operational routines on user profiles

108. Which primary Indian legislation governs cybercrimes and electronic commerce, including offences committed via social media?
(A) The Indian Contract Legislation Act of 1872
(B) The Information Technology Act, 2000
(C) The Right to Information Legislation Act of 2005
(D) The Consumer Protection Legislation Act of 2019

109. Which section of the IT Act, 2000, which formerly dealt with sending offensive messages through communication services, was famously struck down by the Supreme Court of India in 2015 for violating freedom of speech?
(A) Section 66A
(B) Section 43
(C) Section 67
(D) Section 69A

110. Consider the following precautions when sharing personal information online:
I. Accept friend requests from unknown persons to grow your network quickly.
II. Check privacy settings to ensure personal posts are visible only to friends.
III. Share live location tags continuously so friends know where you are.
Which of the above practices are incorrect or unsafe?
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II, and III

111. Adding geographic coordinates to a photograph or social media post is known as:
(A) Geocaching
(B) Cryptography
(C) Steganography
(D) Geotagging

112. Using Incognito Mode or Private Browsing on a web browser ensures that:
(A) Your complete network identity remains completely untraceable to destination web servers
(B) Your local internet service provider is rendered incapable of monitoring destination domains
(C) Browsing history, active cookies, and web session data are purged from local device memory
(D) Your computing device becomes completely immune to all incoming internet malware threats

113. Clearing cache and cookies from a web browser regularly helps to:
(A) Permanently remove user social networking accounts from system servers
(B) Enhance software security while protecting user privacy from web tracking
(C) Expand the total hardware storage disk capacity of the internal drive
(D) Upgrade the web browser software to the newest release automatically

114. During an emergency, what is a responsible way to share information on social media?
(A) Post unverified rumors and speculative warnings on public feeds to alert local residents quickly
(B) Tag high-profile public figures and media handles on unrelated posts to attract extra views
(C) Broadcast live video footage of escalating panic in affected regions to boost social follower counts
(D) Share verified information published directly by official government or emergency services

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47. In social media terminology, what does tagging someone in a post or photo mean?
(A) Permanently blocking the selected user profile from viewing or interacting with the published post
(B) Automatically removing and deleting the specified user from your personal platform friend list
(C) Transmitting a harmful computer virus payload directly to the tagged user's registered device
(D) Adding a clickable profile link to indicate a user's presence or relevance to the shared post

48. If you block another user on a social networking platform, what is the typical result?
(A) Their account activity is immediately flagged and reported to local law enforcement agencies
(B) Their personal user profile is permanently removed and deleted from the platform database
(C) They are restricted from viewing your profile, tagging your account, or sending direct messages
(D) Your account automatically unfollows and removes every contact currently on your friend list

49. What does it mean to archive a post on Instagram?
(A) The post is submitted directly to external internet search engines to achieve higher public search rankings
(B) The post is hidden from the main profile grid and saved to a private archive accessible only to the account owner
(C) The post is permanently erased from system servers and cannot be restored or recovered by the user
(D) The post is automatically crossposted and shared across all secondary social media accounts linked to the user

50. Consider the following statements regarding privacy controls:
I. Users can choose to hide their last seen status on WhatsApp.
II. Facebook allows users to restrict specific friends from seeing certain posts.
III. Once an account is set to public, it can never be changed back to private.
Which of the above statements are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

51. On platforms like Facebook, what is the difference between being friends and simply following someone?
(A) Friendship is a mutual relationship requiring two-way consent, whereas following allows one-way updates without approval
(B) Following a user requires an active paid monthly subscription fee, whereas establishing a friendship is completely free of charge
(C) There is no operational difference; both terms represent identical functional privileges within the platform architecture
(D) Friends are restricted to reading text-based status updates, whereas followers gain exclusive access to view published photo media

52. If a user unfollows a Page on Facebook but does not unlike it, what happens?
(A) The user's personal account is immediately placed under temporary security suspension
(B) The targeted Facebook Page is permanently deleted and removed from the platform database
(C) The user stops receiving updates and posts from that Page within their personal News Feed
(D) The administrative managers of the Page are directly alerted about the action via phone call

53. Which privacy setting for a Facebook Group hides the group from search results, meaning only invited members can find and join it?
(A) Secret (Hidden)
(B) Public
(C) Private but Visible
(D) Open

54. In the context of managing a social media group, what is the role of an Administrator (Admin)?
(A) To provide local wireless internet connectivity and network routing infrastructure to all active group members
(B) To serve as an official customer service support representative employed directly by the social media corporation
(C) To write and maintain the core underlying

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software application code and database architecture for the platform
(D) To exercise administrative oversight over the group, including managing settings, member approvals, and user roles

55. Arrange the typical steps to create a new social media account in the correct logical sequence:
I. Verify email address or mobile number via OTP/Link
II. Enter personal details (Name, DOB, etc.)
III. Download and open the app, or visit the website
IV. Create a username and strong password
Which of the following options represents the correct sequence?
(A) III, II, IV, I
(B) II, III, I, IV
(C) III, IV, II, I
(D) I, II, III, IV

56. Which of the following collectively represent user engagement metrics on a social media post?
(A) IP address, MAC address, and subnet mask
(B) Font size, color depth, and resolution
(C) Likes, comments, shares, and views
(D) Download speed, upload speed, and ping

57. What is the purpose of the bio section on a social media profile?
(A) To publish the detailed hardware technical specifications of the user's personal computer system
(B) To present the full legal terms of service agreement and privacy conditions governing the platform
(C) To securely encrypt and store the account owner's private account passwords and authorization keys
(D) To present a brief introductory description summarizing an individual user or organization's profile

58. On social platforms, what is an avatar?
(A) A graphical image, icon, or digital character representing a user's online profile picture
(B) A self-replicating malicious software application designed to corrupt system operational files
(C) A physical networking hardware adapter utilized to connect computing devices to internet networks
(D) A legally binding contract agreement executed electronically during the account registration process

59. What happens when you mute an account on Twitter (X) or Instagram?
(A) The targeted account is instantly blocked, and an automated push notification alerts them that they were muted by you
(B) Content from the user is hidden from your main feed while maintaining your connection, without sending them any notification
(C) The user's account is immediately placed under administrative lock and deactivated across the entire platform network
(D) You are restricted from sending them direct messages, although their published posts continue to display normally in your feed

NODIA

60. Match the social media action in List I with its correct meaning in List II.
List I: Action
P. DM
Q. Share
R. Like/React
S. Tag
List II: Meaning
1. Expressing approval or an emotion towards a post
2. Sending a private message directly to another user
3. Mentioning another user's handle to link them to the post
4. Distributing someone else's post to your own network
(A) P-2, Q-4, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-2, Q-1, R-4, S-3

61. In social networking terminology, what does sending a DM mean?
(A) Direct Message
(B) Dialing a Mobile
(C) Digital Media
(D) Downloading Media

62. When sharing a web link on a social network, you use a URL. What does URL stand for?
(A) Universal Resource Locator
(B) United Reference Link
(C) Uniform Resource Locator
(D) User Routing Line

63. On a Facebook profile, what distinguishes the cover photo from the profile picture?

(A) The cover photo displays as a compact circular avatar near the user bio, whereas the profile picture spans across the top header background as a banner
(B) The cover photo remains strictly confidential to the account owner, whereas the primary profile picture is visible to all platform members publicly
(C) There is no functional distinction between the two elements; both terms refer interchangeably to identical visual media displayed on the profile page
(D) The cover photo serves as a wide background header banner, whereas the profile picture is a smaller image identifying the account across the site

64. Which algorithmically driven feature curates and displays a continuous stream of content from friends, pages, and advertisers on a user's screen?
(A) The settings menu
(B) The friend request list
(C) The news feed
(D) The direct inbox

65. What does it mean when a topic is trending on social media?
(A) The subject matter is actively flagged and removed from public discourse by platform moderation algorithms
(B) The topic is experiencing a sudden spike in activity, generating widespread user discussion across the platform
(C) The post topic has failed to accumulate any user interactions, likes, or shares over the preceding 24-hour period
(D) The subject matter focuses exclusively on foreign currency exchange markets and international stock trading news

66. Which of the following is the most appropriate use of a social media Business Page?
(A) Communicating privately and secretly exchanging direct personal messages with personal contacts and friends
(B) Storing confidential personal data backups, digital media archives, and private organizational documents safely
(C) Accessing unauthorized file-sharing networks to download pirated digital movies and copyrighted media content
(D) Building brand awareness, maintaining customer engagement, and executing targeted commercial advertising campaigns

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67. What is influencer marketing in the context of social media?
(A) Commercial brands partnering with popular content creators with strong followings to promote products
(B) Deploying automated software scripts and bot networks to artificially inflate interaction metrics on social posts
(C) The illegal technical process of unauthorized access and hacking into a business rival's corporate media account
(D) A mandatory state legislative regulation prohibiting commercial entities from publishing digital advertisements

68. Which term describes the practice of utilizing a large social media audience to gather ideas, feedback, or funding for a project?
(A) Phishing
(B) Trolling
(C) Crowdsourcing
(D) Data mining

69. Government departments in Uttar Pradesh frequently use their official social media handles (like @UPGovt) primarily for:
(A) Distributing official announcements, highlighting welfare schemes, and resolving citizen grievances
(B) Hosting competitive online multiplayer gaming tournaments and e-sports streams for casual internet users
(C) Facilitating commercial real estate property transactions, buying plots, and selling state land holdings
(D) Publishing personal holiday photographs and private recreational activity updates of state government workers

70. Consider the following statements regarding the use of social networking in education:
I. Social media can facilitate collaborative learning and study groups.
II. Institutions use platforms to share announcements and event updates.
III. Social networking guarantees that students will achieve higher examination grades.
IV. Platforms like YouTube offer vast educational tutorials and lectures.
Which of the above statements is/are incorrect?
(A) I and II
(B) III only
(C) II and IV
(D) IV only

resolution and video rendering quality of the installed app
(B) Unauthorized malicious actors on the shared network may intercept unencrypted login credentials
(C) It triggers automated software routines that permanently delete all public social media posts
(D) It causes the internal smartphone battery hardware to overheat and fail instantly upon connecting

40. Consider the following statements about messaging platforms:
I. WhatsApp requires a mobile phone number to create an account.
II. Telegram does not offer end-to-end encryption in any of its chat modes.
III. Both WhatsApp and Telegram support voice and video calling.
IV. WhatsApp allows the creation of groups for mass communication.
Which of the above statements are correct?
(A) I, II, and III
(B) I, III, and IV
(C) II, III, and IV
(D) I, II, and IV

41. During social media account verification, a temporary code is often sent to the user's mobile number. What does the abbreviation OTP stand for?
(A) Online Transaction Protocol
(B) Open Telecommunications Platform
(C) Over The Phone
(D) One-Time Password

42. According to standard terms of service, what is the minimum age requirement to create an account on platforms like Facebook and Instagram?
(A) 10 years
(B) 13 years
(C) 16 years
(D) 18 years

43. Why do social media registration pages often include a CAPTCHA test?
(A) To accurately identify and verify the physical geographic location of the registering user
(B) To distinguish whether the registration request is initiated by a real human or an automated bot
(C) To confirm and ensure that the user has successfully transferred the mandatory registration fee
(D) To measure and evaluate the current upload and download internet network speed of the user device

44. What is the purpose of Two-Factor Authentication (2FA) in social networking account privacy?
(A) It permits two distinct user profiles to simultaneously share and operate a single user account
(B) It demands an additional verification factor beyond a primary password to complete user login
(C) It automatically translates every published post and comment into two selected target languages
(D) It doubles the data transmission speed when uploading image files and videos to the platform

45. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Setting a social media profile to Private enhances user security.
Reason (R): A private account restricts who can view the user's posts, requiring the user to approve follower requests.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

46. Which of the following is a key difference between a public account and a private account on Instagram?
(A) Public accounts are strictly barred from using hashtags in posts, whereas private account owners retain full hashtag functionality
(B) Private account holders must pay a mandatory monthly subscription fee, whereas public profiles are completely free to operate
(C) Public account posts are visible to all users, whereas private account posts can only be viewed by approved followers
(D) Public accounts can only be accessed through desktop web browsers, whereas private accounts require mobile device logins

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80. Consider the following statements about the benefits of social networking for a business:
I. It provides a cost-effective method for advertising compared to traditional media.
II. It allows direct, real-time customer service interactions.
III. It completely eliminates the need for a business to have its own website.
Which of the above statements are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

81. The set of rules and conventions governing acceptable and polite behavior on social media and the internet is known as:
(A) Algorithm
(B) Netiquette
(C) Encryption
(D) Firewall

82. Which of the following actions constitutes an example of cyberbullying?
(A) Respectfully expressing a conflicting opinion regarding a friend's published film review on a public discussion board
(B) Choosing to permanently remove and delete a personal status update or photograph from one's own profile page
(C) Filing a formal administrative complaint to report an impersonator's suspicious account to platform moderators
(D) Continuously transmitting hostile, intimidating, or abusive communications to a targeted individual over internet channels

83. In online communities, what is the act of deliberately posting inflammatory, irrelevant, or offensive comments to provoke an emotional response called?
(A) Trolling
(B) Phishing
(C) Tagging
(D) Vlogging

84. Which term describes the malicious practice of publicly revealing previously private personal information about an individual online without their consent?
(A) Spoofing
(B) Pharming
(C) Doxxing
(D) Skimming

NODIA

85. Select the correct logical sequence of steps a responsible user should take to identify fake news before sharing an article.
(A) Read only the headline → Share immediately → Check the date → Verify the author
(B) Verify the source → Read beyond the headline → Check the date and author → Consult a fact-checking site → Share
(C) Share immediately → Read comments → Verify source → Delete if false
(D) Consult fact-checking site → Share → Check date → Read headline

86. What is a deepfake in the context of social media misinformation?
(A) A comprehensive investigative news article written and published by certified professional journalists following strict editorial standards
(B) A sophisticated network encryption protocol designed specifically to mask and anonymize user IP address locations from network trackers
(C) A cryptographic software algorithm engineered to automatically construct highly resilient, complex user authentication passphrases
(D) A realistic synthetic media recording generated by artificial intelligence that portrays an individual performing actions they never took

87. An unknown user sends you a Direct Message (DM) on Twitter claiming you have won a lottery, asking you to click a link and enter your bank details. This is a classic example of:
(A) Crowdfunding
(B) Phishing
(C) E-commerce
(D) SEO marketing

88. Sensationalized headlines designed primarily to entice users to click on a link, often leading to low-quality or misleading content, are known as:
(A) Spam
(B) Firewalls
(C) Clickbait
(D) Cookies

89. What does the term echo chamber refer to in social media environments?
(A) A physical hardware diagnostic malfunction that induces severe electronic audio feedback loops throughout ongoing video calls

71. What is the purpose of Social Media Analytics tools provided to business accounts?
(A) To assist electrical engineers in designing physical computer hardware components and microprocessors
(B) To track user interaction metrics including reach, content impressions, and audience demographic profiles
(C) To execute low-level utility operations that format and erase data on external mobile flash memory cards
(D) To write core software source code for constructing modern computer and smartphone operating systems

72. In social media advertising, what does target audience refer to?
(A) The group of account holders who have explicitly blocked or restricted communication from the business page
(B) The internal corporate staff, software developers, and executive employees working at the social platform
(C) The specific consumer segment, characterized by shared demographics and interests, targeted by an advertisement
(D) The automated software web crawlers and click bots programmed to generate artificial interactions on web ads

73. Which of the following is an example of using social media for e-governance?
(A) A private citizen placing an online food delivery order through a local commercial restaurant mobile application
(B) A university student participating in a real-time multiplayer video game match with international online friends
(C) A small business proprietor publishing a humorous internet meme image on their personal social media profile page
(D) A city traffic police department utilizing X to broadcast real-time road advisories and receive public complaints

74. When content spreads rapidly and widely from user to user across social networks, it is said to have gone:
(A) Viral
(B) Dormant
(C) Encrypted
(D) Offline

75. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Governments and disaster management agencies increasingly rely on social media during natural calamities.
Reason (R): Social media platforms allow for rapid, real-time dissemination of emergency alerts and evacuation information to a wide audience.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

76. In digital content creation for social media, what is the primary difference between a podcast and a vlog?
(A) A podcast requires internet, whereas a vlog does not
(B) A podcast is audio-based, whereas a vlog is video-based
(C) A vlog is audio-based, whereas a podcast is text-based
(D) A podcast can only be created by businesses, whereas vlogs are only for individuals

77. A recruiter wants to search for candidates who possess specific IT skills like Java and SQL. Which platform is most tailored for this professional search?
(A) LinkedIn
(B) Snapchat
(C) Pinterest
(D) TikTok

78. In the context of marketing on social networks, what does the abbreviation B2C stand for?
(A) Business to Corporation
(B) Brand to Company
(C) Business to Consumer
(D) Buyer to Client

79. The Government of India's citizen engagement platform, which heavily utilizes social media to invite ideas and feedback from citizens, is known as:
(A) DigiLocker
(B) UMANG
(C) e-NAM
(D) MyGov

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two concepts; both terms serve as identical synonyms within digital media terminology

98. Oversharing on social media poses a significant risk primarily to a user's:
(A) Monthly cellular internet bandwidth allocation quotas
(B) Internal smartphone device battery operational lifespan
(C) Central processing unit performance and clock speed
(D) Personal user privacy and real-world physical security

99. A person continuously tracks someone's location through their social media check-ins, saves their photos without permission, and sends them constant unwanted messages. This behavior constitutes:
(A) Cyberstalking
(B) Digital marketing
(C) Ethical hacking
(D) Beta testing

100. Consider the following statements regarding the identification of fake news:
I. Reputable news outlets usually cite sources and have verifiable authors.
II. Satirical websites (like The Onion or Faking News) produce factual journalism.
III. Doctored images can sometimes be identified using reverse image search tools.
IV. High emotional language and ALL CAPS in headlines are common indicators of clickbait or fake news.
Which of the above statements are correct?
(A) I, II, and III
(B) I, III, and IV
(C) II, III, and IV
(D) I, II, and IV

101. Which of the following is considered the most secure practice for setting a social media password?
(A) Combining uppercase letters, lowercase letters, numbers, and symbols
(B) Memorizing and entering your primary personal mobile telephone number
(C) Selecting a common phrase such as the simple string "password123"
(D) Combining your first given name alongside your personal birth date

102. What utility program helps a user securely store and organize complex passwords for various social media and web accounts?
(A) Task Manager
(B) Device Manager
(C) Disk Defragmenter
(D) Password Manager

103. In information technology, what does the term digital footprint refer to?
(A) The physical surface area dimensions occupied by a computer processing unit on a motherboard layout
(B) The record of personal data traces left behind by an individual during digital internet and social media use
(C) An optical scanning hardware peripheral utilized to capture biological fingerprints for secure system login
(D) The total environmental carbon emissions footprint generated during the industrial production of smartphones

104. Which of the following is an example of an active digital footprint?
(A) A website automatically logging your IP address when you visit it
(B) An app tracking your location in the background
(C) Deliberately posting a comment on a public Facebook page
(D) Search engines storing your search query history without your direct input

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105. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is difficult to permanently erase data once it is posted publicly on social media.
Reason (R): Other users can take screenshots, download media, or share content before the original creator deletes the post.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

106. If you encounter content on a social networking platform that promotes violence or violates community standards, what is the correct feature to use?
(A) Report the content directly to platform

(B) An open online forum or public discussion group operating completely without assigned administrative moderators or posting rules
(C) An automated communication system utility programmed to instantly dispatch template responses to incoming user message traffic
(D) An online environment where algorithm filtering exposes users solely to viewpoints matching and validating their existing beliefs

90. Match the cyber risk term in List I with its description in List II.
List I: Cyber Risk Term
P. Cyberstalking
Q. Phishing
R. Doxxing
S. Trolling
List II: Description
1. Deceptively acquiring sensitive data like passwords
2. Publishing someone's private contact information maliciously
3. Provoking arguments through inflammatory posts
4. Repeatedly using electronic communication to harass or frighten someone
(A) P-4, Q-1, R-2, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-2, R-1, S-3
(D) P-3, Q-1, R-4, S-2

91. A psychological phenomenon driven by social media usage where individuals feel anxious that others are having rewarding experiences without them is known by the abbreviation:
(A) YOLO
(B) FOMO
(C) ASAP
(D) HTTP

92. The habit of excessively scrolling through negative, distressing, or bad news on social media feeds for long periods is termed:
(A) Ghosting
(B) Doomscrolling
(C) Phubbing
(D) Catfishing

93. What is a digital detox?
(A) Intentionally taking a temporary break from electronic hardware and online networks to improve mental health and lower stress
(B) Downloading and executing a dedicated security software application to eliminate malware infections from a mobile smartphone device
(C) Executing a low-level hardware formatting process to permanently erase all personal user files stored on an internal hard drive
(D) Updating and altering access credentials across every personal social networking profile simultaneously as a security measure

94. To combat social networking addiction, modern smartphones and social media applications provide features to monitor usage. This feature is commonly known as:
(A) Airplane Mode
(B) Battery Saver
(C) Screen Time or Digital Wellbeing
(D) Dark Mode

95. The false sensation that one's mobile phone is vibrating or ringing with a new social media notification when it actually is not is known as:
(A) Carpal tunnel syndrome
(B) Digital amnesia
(C) Cyberchondria
(D) Phantom vibration syndrome

96. AltNews and BoomLive are prominent examples of which type of organizations functioning in the Indian digital space?
(A) Commercial e-commerce marketplace platforms for buying online goods
(B) Official governmental social media public relations departments
(C) Independent non-partisan fact-checking organizations countering misinformation
(D) Telecommunication providers supplying high-speed broadband internet services

97. What is the fundamental difference between misinformation and disinformation on social networks?
(A) Misinformation exclusively involves manipulated graphic image files, whereas disinformation refers strictly to deceptive written text documents
(B) Misinformation involves unintentionally sharing inaccurate facts, whereas disinformation is false material created purposely to deceive others
(C) Disinformation is an issue restricted strictly to Facebook, whereas misinformation occurs exclusively within WhatsApp messaging groups
(D) There is no semantic distinction between the

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handles

115. What is the national helpline number in India dedicated to reporting cybercrimes and financial frauds immediately?
(A) 100
(B) 108
(C) 1930
(D) 1098

116. The deceptive practice of creating a fake social media profile to trick someone into a romantic relationship or for financial gain is known as:
(A) Vishing
(B) Pharming
(C) Catfishing
(D) Skimming

117. In the context of digital security, what is social engineering?
(A) Manipulating individuals into revealing confidential credentials or taking risky actions
(B) Utilizing specialized computer software applications to design public infrastructure project plans
(C) Writing underlying source code to construct complex databases for modern social platforms
(D) Employing digital software modules to connect platform members directly with field engineers

118. To access region-restricted content or protect privacy on public Wi-Fi while using social networks, users sometimes use a VPN. What does VPN stand for?
(A) Visual Public Node
(B) Variable Processing Number
(C) Verified Personal Network
(D) Virtual Private Network

119. In India, which nodal agency deals with cybersecurity threats and issues advisories regarding social media vulnerabilities?
(A) TRAI
(B) CERT-In
(C) NASSCOM
(D) NITI Aayog

120. Match the IT Act Section/Concept in List I with its description in List II.
List I: IT Act Section / Concept
P. Section 66C
Q. Section 66E
R. Section 67
S. Section 69A
List II: Description
1. Punishment for identity theft
2. Punishment for violation of privacy (capturing/publishing private images)
3. Publishing or transmitting obscene material in electronic form
4. Power to issue directions for blocking public access to information
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-4, Q-3, R-2, S-1
(D) P-1, Q-3, R-2, S-4

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121. Before creating a social network account, users are required to accept a legal agreement outlining rules and policies. This is typically known as:
(A) Formal Memorandum of Understanding Document
(B) Legally Binding Non-Disclosure Agreement
(C) Standard Cryptographic Digital Certificate
(D) Terms of Service (ToS) or User Agreement

122. If a user uploads a popular copyrighted movie or music track to their social media profile without permission, the platform will likely remove it due to:
(A) Copyright Infringement
(B) Defamation
(C) Malware distribution
(D) Phishing policies

123. The act of copying someone else's written post or idea on social media and presenting it as your own original thought is called:
(A) Endorsement
(B) Plagiarism
(C) Encryption
(D) Syndication

124. Under Indian IT Rules, social media platforms are generally classified as "Intermediaries". What does this imply regarding legal liability?
(A) They retain direct criminal liability and corporate executives face prosecution for any unlawful statement published by individual users
(B) They receive 'safe harbor' protection from user content liabilities, contingent upon exercising due diligence and honoring removal mandates
(C) They are legally classified as primary publishers and are mandated by statutory

ANSWERS

1. (B) An online platform used to build social relations with other people who share similar personal or career interests
Social networking services facilitate the creation of online communities where individuals connect based on shared personal interests, career paths, backgrounds, or real-life connections. These interactive web platforms provide tools for user profile creation, direct communication, content sharing, and relationship building, thereby fundamentally changing global interpersonal communication and digital interaction patterns.

2. (D) SixDegrees
SixDegrees, launched in 1997 by Andrew Weinreich, is widely recognized as the first modern social networking platform. It enabled users to set up personal profiles, create lists of external contacts, and send messages to direct and indirect connections, laying the structural foundation for all subsequent modern social media platforms across the web.

3. (A) Mozilla Firefox
Mozilla Firefox is a free, open-source web browser used to navigate the internet and render HTML content rather than a social networking or messaging service. In contrast, social platforms like Instagram, LinkedIn, and Telegram are specifically designed to facilitate online communication, media sharing, professional connections, and instant messaging between network users.

4. (C) User-generated content and interoperability
The Web 2.0 era shifted internet usage from passive reading of static web pages to interactive, dynamic user engagement. Key features of Web 2.0 include user-generated content, usability, and interoperability, which collectively allowed users to create, share, and collaborate online, providing the necessary infrastructure and cultural shift for social networking services to thrive.

5. (A) Social Networking Site
The abbreviation SNS stands for Social Networking Site or Social Networking Service. These digital platforms enable users to build public or semi-public profiles, form social connections, communicate with others, and share user-generated content across digital networks, playing a vital central role in modern global telecommunications and interactive online group communication across society.

6. (D) A social platform where users broadcast short text updates alongside optional media and links
Microblogging is a specialized social media broadcast service that allows registered account holders to publish brief online messages, typically subject to strict character limits. Users can embed hyperlinks, images, videos, or audio clips within these concise public updates, enabling rapid real-time communication and information dissemination across interconnected global user networks.

7. (B) Microsoft Excel
Microsoft Excel is a software spreadsheet application designed for data entry, complex calculations, and statistical analysis. In contrast, Facebook, Instagram, and Twitter operate as digital social networking platforms whose primary function is enabling users to connect, interact, share media, and communicate seamlessly with friends, family, and broad global communities every day.

8. (C) Connecting and communicating with friends and family across the globe
The primary user benefit of social networking services lies in bridging geographical distances by providing instant, efficient communication channels. Features such as text messaging, voice calls, image sharing, and interactive groups allow users to maintain personal relationships, build online communities, and stay continuously updated on family and friends living globally.

9. (D) To show a dynamically updated stream of posts and updates from connected users and pages
A news feed or timeline acts as the central interface component on social networks, dynamically aggregating real-time posts, media updates, announcements, and advertisements. It collects content published by connected

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133. While X (Twitter) is a proprietary, centralized platform, Mastodon is known for being:
(A) An open-source, decentralized microblogging platform network
(B) A localized private organizational intranet networking system
(C) An international physical computing hardware manufacturing firm
(D) A commercial software application dedicated to antivirus protection

134. What are Community Guidelines on a social networking platform?
(A) A directory cataloging local political candidates and civic leaders
(B) A real-time geographic map displaying physical member locations
(C) A technical instructional handbook detailing HTML programming rules
(D) A set of policies specifying acceptable behavior and restricted content

135. Consider the following statements about securing social networking accounts:
I. Using the same password for all social media accounts increases convenience without affecting security.
II. Logging out of accounts on shared or public computers is a mandatory security practice.
III. Regularly reviewing active sessions in account settings helps identify unauthorized logins.
Which of the above statements are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

136. If WhatsApp provides end-to-end encryption for messages, who among the following can read the content of the message?
(A) The sender, the receiver, and WhatsApp employees
(B) Any user on the same Wi-Fi network
(C) The sender and the receiver only
(D) Search engine web crawlers

137. Phishing attempts carried out specifically through fraudulent SMS text messages (often impersonating banks or social platforms) are known as:
(A) Vishing
(B) Pharming
(C) Spoofing
(D) Smishing

138. In India, if cyberbullying involves a minor and includes sexually explicit content, it attracts stringent provisions not only under the IT Act but also under which specific act?
(A) The POCSO Act
(B) The Copyright Act
(C) The Consumer Protection Act
(D) The Motor Vehicles Act

139. Which of the following best demonstrates responsible behavior in the use of social networking?
(A) Instantly sharing a provocative news story across networks based solely on an alarming headline title
(B) Evaluating the factual accuracy and source credibility of digital content prior to sharing it online
(C) Operating under an anonymous pseudonym to publish offensive personal insults on public celebrity pages
(D) Accepting incoming friend connection requests from unknown individuals to inflate visible follower counts

140. Match the mobile application in List I with its core defining feature in List II.
List I: Mobile Application
P. WhatsApp
Q. Instagram
R. LinkedIn
S. X (Twitter)
List II: Core Defining Feature
1. Microblogging and real-time public conversations
2. Professional networking and job searching
3. Instant messaging and VoIP calling based on phone contacts
4. Visual storytelling via reels, stories, and photo grids
(A) P-3, Q-4, R-2, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-3, Q-2, R-4, S-1

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regulation to inspect and pre-approve every user post
(D) They operate under complete immunity from domestic legal frameworks, granting them total exemption from all Indian statutory laws

125. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Social media platforms employ content moderation algorithms and human reviewers.
Reason (R): Platforms must ensure that user-generated content complies with community guidelines and local laws to maintain a safe environment.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

126. Which of the following best represents an emergency use of social networking for public welfare?
(A) Secretly coordinating and organizing a private social surprise birthday gathering
(B) Broadcasting an unauthorized live digital video stream of a paid sports match
(C) Crowdsourcing critical information to locate urgent blood donors for a victim
(D) Posting online classified advertisements to sell used academic textbooks to students

127. The Cyber Swachhta Kendra is an initiative under the Digital India program aimed at:
(A) Distributing free physical laptop hardware and digital computing equipment to students
(B) Promoting public awareness campaigns for Swachh Bharat Abhiyan across official Twitter feeds
(C) Developing and launching indigenous domestic social media platforms for public communication
(D) Remediation and cleaning of botnets and malicious software from citizen computing devices

128. In internet culture, a humorous image, video, or piece of text that is copied and spread rapidly by internet users, often with slight variations, is called a:
(A) Widget
(B) Trojan
(C) Meme
(D) Plugin

129. How does an algorithm generally determine what posts to show you first on your social media feed?
(A) By filtering and serving content created exclusively by registered account holders residing in your local physical city
(B) By evaluating personal interaction history, likes, and engagement patterns to curate relevant content for your feed
(C) By arranging and displaying incoming user updates in rigid alphabetical order corresponding to the account handle
(D) By selecting and displaying published feed posts completely at random through an automated computerized lottery process

130. Consider the following statements regarding responsible digital etiquette:
I. Seek permission before posting pictures of other people.
II. Avoid typing in ALL CAPS, as it is often interpreted as shouting online.
III. Respond to trolls immediately with aggressive language to stop them.
IV. Give credit or tag the original creator when sharing their work.
Which of the above statements are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

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131. The practice where a social media platform deliberately restricts the visibility of a user's content without notifying them is commonly referred to as:
(A) Shadowbanning
(B) Phishing
(C) Whitelisting
(D) Jailbreaking

132. The overall layout, buttons, and ease of use of a social media application are referred to as UI/UX. What does UI stand for?
(A) Universal Internet
(B) Uniform Integration
(C) User Interface
(D) Utility Index

friends, followed public figures, and subscribed brand pages, arranging them using algorithmic relevance or chronological order for smooth user content browsing.

10. (B) I, II, and IV
Social media evolution began early with dial-up bulletin board systems and primitive platforms, but explosive global growth occurred following the expansion of high-speed broadband, 3G and 4G networks, and smartphone camera technology. Platforms attained massive mainstream popularity well before 2015, making the third statement factually inaccurate in this technological context.

11. (B) Mark Zuckerberg
Mark Zuckerberg co-founded Facebook in 2004 alongside his Harvard University roommates Eduardo Saverin, Andrew McCollum, Dustin Moskovitz, and Chris Hughes. Zuckerberg served as the primary driving force behind the platform's initial software launch and expanded it from a campus network into the world's largest social media network operating today globally.

12. (B) A tweet
A post published on Twitter was historically called a tweet, reflecting the brand's bird mascot logo and concise message format. Although Twitter rebranded to X in 2023 and updated its official terminology to posts, the term tweet remains universally recognized to describe microblogging status updates shared on the network platform.

13. (A) Instagram
Instagram is a major photo and video sharing social networking platform launched in 2010. It gained widespread popularity due to its mobile-first design, interactive visual filters, custom image editing tools, stories, and reels, allowing individual creators, influencers, and corporate brands to share visually appealing multimedia content with large global digital audiences.

14. (C) Professionals seeking professional networking, job searching, and career growth
LinkedIn is an business-oriented online platform specifically designed for professional networking, job discovery, industry insights, and career development. It enables registered users to maintain structured digital profiles functioning as interactive resumes, while allowing corporate recruiters to search for talent and enterprises to foster professional business relationships across diverse global economic industries.

15. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
LinkedIn functions as a digital resume repository where users display work experience, education, skills, and professional certifications. Because user profiles showcase verifiable professional backgrounds, corporate recruiters and hiring managers utilize LinkedIn extensively to source talent, evaluate candidate credentials, and conduct targeted recruitment campaigns, making the reason a direct explanation of the assertion.

16. (C) Facebook (Meta)
In February 2014, Facebook (now known as Meta Platforms Inc.) acquired WhatsApp for approximately 19 billion US dollars. This acquisition expanded Facebook's footprint in mobile messaging services, integrating WhatsApp alongside its existing network ecosystem while expanding cross-platform infrastructure, security protocols, and international communications user reach across the entire globe.

17. (B) Telegram Channels
Telegram Channels are a core feature of the Telegram messaging platform designed specifically for broadcasting public messages to unrestricted subscriber bases. Unlike standard messaging groups, channels operate on a one-way communication format where only account administrators hold publishing rights, allowing organizations and creators to disseminate news efficiently to large audiences.

18. (D) It is automatically removed and deleted from the chat after a specified duration
Disappearing Messages is a privacy-enhancing feature in messaging applications like WhatsApp that automatically deletes sent messages from the chat log after a chosen timer duration. Once the set expiration period elapses, the selected messages are permanently erased from both sender and receiver devices, preventing long-term retention of private digital chats.

19. (A) Profiles represent individual personal accounts, whereas Pages are meant for businesses, brand organizations, and public figures
On Facebook, personal Profiles represent non-commercial individual users to connect

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39. (B) Unauthorized malicious actors on the shared network may intercept unencrypted login credentials
Public Wi-Fi networks are frequently unencrypted and open, allowing malicious cyber attackers sharing the same wireless frequency to monitor data transmissions. Using unencrypted networks to access social media accounts introduces man-in-the-middle attacks where attackers intercept sensitive user credentials, personal session cookies, and login authorization tokens without user detection online.

40. (B) I, III, and IV
Statement II is false because Telegram provides end-to-end encryption through its optional Secret Chat mode, alongside voice and video calling support. WhatsApp requires a mobile phone number for registration and supports group messaging alongside calls, making statements I, III, and IV completely accurate regarding platform operations and security features overall.

41. (D) One-Time Password
OTP stands for One-Time Password. It is an automatically generated numeric or alphanumeric code sent via SMS, email, or an authenticator app to verify identity during user authentication. Designed for a single login session, an OTP expires quickly, adding a vital layer of security against unauthorized profile access attempts online.

42. (B) 13 years
Under the terms of service of most social media platforms, including Facebook, Instagram, Snapchat, and X, users must be at least 13 years old to create an account. This age threshold is established globally to align with child online privacy regulations, such as the Children's Online Privacy Protection Act rules.

43. (B) To distinguish whether the registration request is initiated by a real human or an automated bot
CAPTCHA is a security verification mechanism used on website registration pages to differentiate human users from automated software bots. By requiring users to interpret distorted text, solve visual puzzles, or click specific images, CAPTCHAs prevent automated scripts from creating fake spam accounts or initiating brute-force cyber attacks on server systems.

44. (B) It demands an additional verification factor beyond a primary password to complete user login
Two-Factor Authentication (2FA) is an essential cybersecurity protocol requiring two independent authentication factors to verify user identity. Instead of relying solely on a user password, 2FA adds a secondary security check, such as a temporary OTP sent via SMS or an authenticator app, significantly mitigating password theft risks online.

45. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Configuring a social media profile to Private enhances user safety by restricting post access exclusively to approved followers. Because unapproved public users cannot view published content, photos, or personal details, this setting prevents unauthorized data harvesting, privacy violations, and unwanted communications, making the reason a direct explanation of the assertion.

46. (C) Public account posts are visible to all users, whereas private account posts can only be viewed by approved followers
The fundamental distinction between a public and private account on Instagram involves content accessibility. Public account posts, stories, and profile information can be viewed by anyone on or off the platform. In contrast, private account media remains completely restricted, requiring the account owner to explicitly review and approve follower requests.

47. (D) Adding a clickable profile link to indicate a user's presence or relevance to the shared post
Tagging in social media entails attaching a clickable profile link or username handle to a specific post, comment, or photograph. Tagging notifies the mentioned user while linking their profile directly to the media, making it easy for viewers to identify individuals present in pictures or relevant to the shared discussion.

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48. (C) They are restricted from viewing your profile, tagging your account, or sending direct messages
Blocking another user on a social platform breaks all network interactions between the two accounts. The blocked user is restricted from searching for your profile, viewing your timeline posts, viewing your stories, sending direct messages, or tagging your account handle,

29. (A) You share a mutual connection with them
On LinkedIn's professional networking hierarchy, direct personal contacts are designated as 1st-degree connections. Individuals connected directly to your 1st-degree connections—meaning you share at least one mutual contact—are categorized as 2nd-degree connections, whereas contacts linked solely through 2nd-degree connections represent 3rd-degree connections across the platform network overall.

30. (A) P-3, Q-2, R-1, S-4
Each major platform offers distinct features: Facebook is the largest general network for connecting friends and pages; WhatsApp provides end-to-end encrypted chat services; LinkedIn serves as a professional networking hub centered on digital resumes; and Instagram focuses heavily on visual content sharing including photos, reels, and stories across networks.

31. (D) Telegram supports the seamless exchange of large media files alongside cloud-based message storage
Telegram offers substantial cloud storage features enabling users to transmit large files up to 2 gigabytes each, store chat histories securely online, and sync messages across multiple devices seamlessly. Standard SMS, by comparison, is restricted by strict carrier data limits, lacks cloud file integration, and only supports basic cellular text messages.

32. (C) Instagram does not allow users to send private messages.
The statement that Instagram does not allow private messages is false. Instagram contains a built-in feature called Direct Messaging (DM) that enables users to send private text messages, photos, videos, audio notes, and shared posts to individual accounts or custom private group chats, making the third statement completely incorrect.

33. (C) 24 hours
Story features across platforms such as Instagram, Facebook, and WhatsApp allow account owners to post photos and ephemeral video content that remains visible to followers for exactly 24 hours. After this period expires, stories automatically disappear from the public feed, although creators may archive or highlight them permanently later.

34. (D) To fix it at the very top section of the chat window for quick visibility by all members
Pinning a message in a WhatsApp chat or Telegram channel anchors that selected communication to the top header section of the chat interface. This ensures that essential information, rules, or announcements remain highly visible and easily accessible to all group members regardless of incoming message volume over time.

35. (A) Facebook, Instagram, WhatsApp
Meta Platforms, Inc. is a multinational technology conglomerate that owns and operates major digital communication services, including the Facebook social network, the Instagram media sharing app, and the WhatsApp messaging platform. These platforms collectively form the core foundation of Meta's global social networking and digital advertising empire operating today.

36. (C) A paid premium feature enabling direct messages to be sent to LinkedIn members without a prior connection
InMail is a specialized premium messaging feature offered by LinkedIn. It allows registered account holders to send private messages directly to any other LinkedIn member without requiring an existing 1st-degree connection, making it an essential tool for corporate recruiters, job seekers, sales professionals, and business development managers seeking expansion.

37. (A) The account is authentic and verified
A blue checkmark badge appearing beside an account handle on digital networks like Instagram, Facebook, and X signifies that the account has been authenticated by the platform. This verification badge confirms to the public that the profile belongs legitimately to a confirmed public figure, celebrity, global brand, or subscription subscriber.

38. (C) 280
When Twitter launched in 2006, it enforced a strict character limit of 140 characters per post to align with standard mobile SMS length limits. In November 2017, the platform expanded this character cap to 280 characters for standard users, granting expanded space for nuanced expression and user digital communication.

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serves as an online identity marker, enabling users to personalize profile pages and represent themselves visually across public digital communities around the world.

59. (B) Content from the user is hidden from your main feed while maintaining your connection, without sending them any notification
Muting an account on platforms like Twitter (X) or Instagram suppresses that user's posts, reposts, and stories from appearing in your home feed. Muting is a discrete control action; the targeted user is not notified, and you remain connected as followers or friends without severing formal network connections on the site.

60. (A) P-2, Q-4, R-1, S-3
Standard social media terms match specific functions: DM (Direct Message) refers to sending private messages; Share involves reposting content to one's network; Like/React expresses approval or emotion toward a post; and Tag involves mentioning a user handle to link their profile directly to the published post content online.

61. (A) Direct Message
In social media terminology, DM stands for Direct Message. It represents a private communication channel between specific users on platforms such as X, Instagram, and LinkedIn. Unlike public posts, comments, or broadcast updates, DMs are private text, media, or voice communications accessible exclusively to the designated sender and recipient accounts.

62. (C) Uniform Resource Locator
URL stands for Uniform Resource Locator. It serves as the unique web address used to identify and locate specific web pages, media files, or resources across the World Wide Web. On social platforms, sharing a URL allows users to direct followers directly to external websites, articles, or online content sources.

63. (D) The cover photo serves as a wide background header banner, whereas the profile picture is a smaller image identifying the account across the site
On Facebook profiles, the profile picture is a smaller icon representing the user's personal identity beside comments, posts, and search listings across the platform. In contrast, the cover photo is a prominent, wide banner displayed at the top header of the profile page, serving primarily as a stylistic background image.

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64. (C) The news feed
The news feed is an algorithmically curated interface component present on major social media platforms. It continuously aggregates, filters, and ranks posts, images, videos, updates, and sponsored advertisements published by connected friends, followed profiles, and subscribed pages, displaying a personalized stream of content on the user's screen in real time.

65. (B) The topic is experiencing a sudden spike in activity, generating widespread user discussion across the platform
A topic is defined as trending on social media when it experiences a rapid, significant surge in user discussions, posts, mentions, and hashtag usage within a short timeframe. Platform algorithms identify these viral spikes, displaying trending topics publicly to highlight breaking news, major events, and widely discussed global subjects online.

66. (D) Building brand awareness, maintaining customer engagement, and executing targeted commercial advertising campaigns
Social media Business Pages serve as official public hubs for commercial companies, brands, non-profits, and service providers. Unlike individual personal profiles, business pages offer dedicated commercial tools such as audience analytics, product catalogs, customer service communication options, and targeted promotional ad tools to boost market visibility and engagement online.

67. (A) Commercial brands partnering with popular content creators with strong followings to promote products
Influencer marketing involves commercial brands collaborating with popular social media content creators who hold established credibility and dedicated follower bases. Brands leverage an influencer's audience trust and niche domain reach to promote products, services, or brand messaging authentically through sponsored posts, product placements, and creator endorsement campaigns across channels.

effectively making your account invisible to them across the service.

49. (B) The post is hidden from the main profile grid and saved to a private archive accessible only to the account owner
Archiving a post on Instagram removes the selected photo or video from the public profile grid without permanently deleting it from the server. The archived content moves to a private storage section visible exclusively to the profile owner, preserving all original likes, comments, and engagement data for future unarchiving later.

50. (A) I and II only
Statements I and II correctly describe privacy features: WhatsApp users can customize or hide their last seen timestamp, and Facebook enables users to limit post audience settings to specific friends. Statement III is false, as public social media accounts can be changed back to private at any time in account settings.

51. (A) Friendship is a mutual relationship requiring two-way consent, whereas following allows one-way updates without approval
On Facebook, being friends establishes a bilateral relationship requiring mutual approval from both account holders. Following someone, however, represents a unilateral relationship where a user subscribes to receive public status updates and posts from another user or public page without requiring the target account owner's explicit confirmation or bilateral consent.

52. (C) The user stops receiving updates and posts from that Page within their personal News Feed
Liking a Facebook Page indicates user support, whereas following determines content delivery to the user's feed. Unfollowing a Page while retaining the like setting allows the user to remain a fan publicly, but stops the Page's posts and media updates from appearing automatically in the user's personal News Feed interface.

53. (A) Secret (Hidden)
Facebook offers granular privacy settings for groups. A Secret group setting makes the community invisible in search results and directory lists; non-members cannot locate or view the group. Membership is strictly invitation-only, distinguishing it from Public groups or Private Visible groups that appear in public search queries online easily.

54. (D) To exercise administrative oversight over the group, including managing settings, member approvals, and user roles
Group Administrators (Admins) hold top-tier managerial privileges within a social media group. Admins govern group operations by configuring privacy settings, reviewing and approving membership requests, assigning moderator roles, pin posts, enforcing posting rules, and removing inappropriate content or policy-violating members from the online group space over time.

55. (A) III, II, IV, I
Creating a social media account follows a standard linear setup sequence. First, access the platform by downloading the mobile app or visiting its website (III). Next, enter core profile information like full name and birth date (II). Then, create a username and secure password (IV). Finally, verify identity using an OTP or confirmation link (I).

56. (C) Likes, comments, shares, and views
Engagement metrics quantify user interaction and interest in published social media content. Key indicators include likes, comments, shares, retweets, saves, and view counts. These measurements allow content creators and organizations to evaluate content reach, audience interest, communication effectiveness, and overall user interaction performance across digital networks on the web.

57. (D) To present a brief introductory description summarizing an individual user or organization's profile
The biography or bio section on a social profile is a concise text section summarizing an individual's or business's identity, background, occupation, interests, or mission. Located near the profile picture, it offers visitors a quick overview of the account owner, often containing external website links and relevant keywords for discovery.

58. (A) A graphical image, icon, or digital character representing a user's online profile picture
An avatar is a visual representation, graphic icon, customized 2D/3D character, or profile picture associated with a specific user profile on social networks, forums, and virtual environments. It

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with personal contacts using two-way friend requests. In contrast, Pages are public entities created for businesses, public figures, causes, and organizations, allowing them to broadcast content, run commercial ads, analyze metrics, and gain an unlimited number of followers without mutual approval.

20. (B) II only
Statement II is incorrect because Instagram Stories are temporary visual media posts that automatically disappear from user profiles after 24 hours, unless saved to profile Highlights. Statements I and III are accurate, as Reels are short video formats and Instagram includes direct messaging functionality for private communications between account holders.

21. (B) X
In July 2023, billionaire tech entrepreneur Elon Musk officially rebranded Twitter as X. The rebranding replaced the iconic blue bird logo with an emblem representing the letter X, reflecting a strategic pivot toward transforming the social platform into an all-in-one application offering messaging, video content, and financial payment services.

22. (D) Only the communicating sender and receiver can access message contents, preventing interception by third parties or the service provider
End-to-End Encryption (E2EE) is a robust security protocol ensuring that transmitted data is encrypted on the sender's device and decrypted only on the recipient's device. Intermediary servers, internet service providers, malicious third parties, and even platform operators are technically incapable of accessing or reading the unencrypted communication contents during transit.

23. (B) YouTube
YouTube is primarily an online video-sharing and streaming platform built for public content distribution, hosting long-form and short-form video media. In contrast, WhatsApp, Telegram, and Signal are categorized primarily as instant messaging applications engineered specifically for real-time private communications, direct chat exchange, and group text transmission among individual mobile users.

24. (C) In a Broadcast List, messages deliver as private individual chats where recipients cannot see each other, unlike interactive WhatsApp Groups
In WhatsApp Groups, messages are posted in a shared chat room visible to all group participants, enabling collective multi-user interactions. Conversely, a WhatsApp Broadcast List allows an account owner to send a single message to multiple chosen contacts simultaneously, delivering it as an individual private chat thread without revealing other recipients.

25. (B) LinkedIn, Facebook, Instagram, Telegram
Examining launch dates confirms the chronological sequence of these digital platforms: LinkedIn was launched in May 2003, Facebook was established in February 2004, Instagram entered the app market in October 2010, and Telegram was introduced in August 2013, making this chronological ordering accurate from oldest platform to newest created service.

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26. (A) To categorize content by topic or keyword, facilitating easier discovery and search
On social platforms, a hashtag consists of the symbol # followed directly by a keyword or phrase without spaces. Hashtags function as indexable metadata, grouping related posts into searchable categories. Clicking a hashtag allows users to discover all public content associated with that specific theme, event, or topic across the platform.

27. (B) Reposting (Retweeting)
Sharing another user's post to one's own timeline or feed on X was traditionally known as retweeting and is now termed reposting. This mechanism allows content to spread beyond its original author's reach, amplifying visibility, enabling public discourse, and crediting the original poster directly within the shared post media container.

28. (B) Application Programming Interface
An Application Programming Interface (API) is a software intermediary that permits different software applications to communicate and share data securely. Social media APIs allow third-party developers and web software to integrate features like embedded post feeds, social media sign-in options, automated posting tools, and data analytics capabilities into external software systems.

68. (C) Crowdsourcing
Crowdsourcing is the process of obtaining needed services, ideas, feedback, micro-tasks, or financial support by soliciting contributions from a large group of online community members. Businesses and creators utilize social media networks for crowdsourcing to gather consumer insights, solve technical challenges, collect public opinions, or fund innovative creative projects globally.

69. (A) Distributing official announcements, highlighting welfare schemes, and resolving citizen grievances
Government bodies, such as the Government of Uttar Pradesh, utilize official social media handles to facilitate e-governance and public communication. These handles distribute verified administrative updates, raise awareness about government welfare schemes, communicate emergency advisories, and address citizen complaints or grievances transparently in real time across state networks.

70. (B) III only
Statement III is incorrect because social media usage cannot guarantee high examination grades, as academic performance depends on individual study habits and effort. Statements I, II, and IV are correct, highlighting how social networks support collaborative study groups, institutional announcements, and educational video tutorials on platforms like YouTube online.

71. (B) To track user interaction metrics including reach, content impressions, and audience demographic profiles
Social Media Analytics tools allow business account owners to monitor performance data and audience engagement metrics. These tools measure key statistical indicators including content impressions, overall reach, follower click-through rates, video view counts, and demographic breakdowns, helping businesses optimize marketing strategies and improve audience engagement across commercial channels.

72. (C) The specific consumer segment, characterized by shared demographics and interests, targeted by an advertisement
In digital advertising, a target audience refers to the specific group of consumers identified as the intended recipients of a promotional campaign. Advertisers define target audiences using specific demographic parameters such as age, geographic location, gender, income, occupational field, and personal consumer interests to maximize ad relevance and campaign ROI.

73. (D) A city traffic police department utilizing X to broadcast real-time road advisories and receive public complaints
E-governance involves public sector institutions using information technologies to deliver government services, broadcast official information, and engage citizens. A municipal traffic police force utilizing X to post real-time road updates, issue traffic advisories, and receive public reports serves as a direct practical example of e-governance in action on social media.

74. (A) Viral
In social media contexts, content is described as going viral when it achieves rapid, widespread online circulation across platforms through peer-to-peer sharing. Viral posts rapidly reach millions of viewers within hours, driven by intense user interest, high share rates, algorithmic amplification, and extensive cross-platform redistribution across user global networks.

75. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Disaster management authorities increasingly leverage social networks during natural calamities because these platforms facilitate instant, broad information broadcasting. Because social networks rapidly deliver critical evacuation orders, weather warnings, and safety guidelines directly to mobile users, the reason accurately explains why public administration relies heavily on social media in crisis emergencies.

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76. (B) A podcast is audio-based, whereas a vlog is video-based
The defining distinction between a podcast and a vlog centers on primary communication media format. A podcast is an audio-based digital program featuring spoken episodes downloadable or streamable via internet directories. Conversely, a vlog (video blog) relies primarily on visual video recordings documenting personal thoughts, travel, tutorials, or daily events.

77. (A) LinkedIn
LinkedIn is the premier platform tailored for professional recruitment and job candidate sourcing. Its search algorithms enable HR

Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

10. Which of the following is NOT an example of a G2G (Government to Government) interaction?
(A) Central government sharing crime database with state police
(B) A state finance department releasing funds to a district magistrate's office
(C) A citizen downloading a land record from a state portal
(D) Two different state governments exchanging inter-state transport tax data

11. Which of the following is NOT one of the nine pillars of the Digital India programme?
(A) Broadband Highways
(B) Universal Access to Mobile Connectivity
(C) Free Laptops for All Citizens
(D) Public Internet Access Programme

12. Select the correct order of the typical stages of e-Governance maturity from the options provided below:
(A) Transaction → Interaction → Information → Transformation
(B) Information → Interaction → Transaction → Transformation
(C) Interaction → Information → Transformation → Transaction
(D) Transformation → Transaction → Interaction → Information

13. What is the full form of UMANG in the context of Indian e-Governance?
(A) Universal Mobile Access for National Governance
(B) Unified Management of All National Governments
(C) Universal Mobile Application for Networked Governance
(D) Unified Mobile Application for New-age Governance

14. Consider the following statements regarding the UMANG app:
I. It provides a single platform for all Indian Citizens to access pan-India e-Gov services.
II. It supports multiple Indian languages.
III. It is developed by the Ministry of Electronics and Information Technology (MeitY).
IV. It works offline without any internet connection.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II, III, and IV only
(D) I, II, III, and IV

15. The DigiLocker service, provided by the Government of India, offers how much dedicated cloud storage space to a user upon signing up?
(A) 500 MB
(B) 1 GB
(C) 5 GB
(D) 15 GB

16. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): Documents digitally signed and issued directly to a user's DigiLocker are treated at par with original physical documents.
Reason (R): DigiLocker documents are legally recognized under the Information Technology Act, 2000.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

17. Which unique identification number must mandatorily be linked to a DigiLocker account to fetch issued documents?
(A) PAN Card Number
(B) Voter ID Number
(C) Aadhaar Number
(D) Passport Number

18. The flagship 'Digital India' programme was officially launched by the Government of India on:
(A) 1 July 2014
(B) 1 July 2015
(C) 15 August 2016
(D) 2 October 2017

19. Match the e-Governance applications in List I with their primary domain in List II.
List I: (Applications)
P. Vahan
Q. Bhoomi
R. e-Sanjeevani
S. PM-KISAN

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87. (B) Phishing
Unsolicited digital messages promising unexpected financial jackpots or prizes to trick users into revealing confidential banking details, passwords, or personal credentials represent classic phishing scams. Cybercriminals employ deceptive social engineering techniques to exploit user trust, harvest sensitive credentials, and compromise financial security across social media networks every day.

88. (C) Clickbait
Clickbait describes sensationalized, exaggerated, or misleading online headlines designed specifically to provoke user curiosity and entice website clicks. Clickbait headlines frequently withhold key details or promise dramatic revelations, driving web traffic to low-quality articles, ad-heavy web pages, or deceptive content to monetize page views and ad impressions.

89. (D) An online environment where algorithm filtering exposes users solely to viewpoints matching and validating their existing beliefs
An echo chamber on social networks is an environment where personal ideological perspectives are continuously amplified and reinforced by algorithmic curation. Users are exposed primarily to opinions, news items, and viewpoints matching their pre-existing beliefs, while opposing arguments are filtered out, contributing to intellectual bias, tribalism, and societal polarization online.

90. (A) P-4, Q-1, R-2, S-3
Cyber threat definitions correspond accurately to their respective functions: Cyberstalking involves using electronic messaging to harass someone persistently; Phishing is deceptively harvesting sensitive passwords; Doxxing involves maliciously releasing private contact details; and Trolling involves posting inflammatory statements to provoke user arguments across online social network forums.

91. (B) FOMO
FOMO stands for Fear Of Missing Out. It represents a prevalent psychological phenomenon intensified by frequent social media viewing, where individuals experience persistent anxiety that peers are engaging in enjoyable, rewarding, or social activities without them, driving compulsive checking of digital feeds and online updates across smartphone device apps.

92. (B) Doomscrolling
Doomscrolling describes the behavioral habit of compulsively consuming a continuous stream of negative, distressing, or alarming news coverage on social networks. Despite experiencing emotional exhaustion, anxiety, or sadness, individuals engaging in doomscrolling find it difficult to stop scrolling through depressing articles and online updates on their mobile screens.

93. (A) Intentionally taking a temporary break from electronic hardware and online networks to improve mental health and lower stress
A digital detox is a voluntary period during which an individual refrains from using electronic devices such as smartphones, computers, and social media platforms. Taking a temporary break from continuous connectivity helps reduce psychological stress, curb screen addiction, improve sleep quality, and foster real-world social interactions in daily life.

94. (C) Screen Time or Digital Wellbeing
Modern operating systems integrate features titled Screen Time or Digital Wellbeing to monitor device usage and foster healthy digital habits. These dashboard utilities track daily application usage, display total device unlocks, monitor notification frequencies, and enable users to set app time limits to mitigate social media addiction on mobile phones.

95. (D) Phantom vibration syndrome
Phantom vibration syndrome describes a tactile sensory hallucination where a user mistakenly feels their mobile phone vibrating or ringing in a pocket or hand. Driven by heightened psychological anticipation of social media notifications and smartphone alerts, the brain misinterprets minor muscle twitches or clothing friction as actual incoming digital phone vibrations.

96. (C) Independent non-partisan fact-checking organizations countering misinformation
AltNews and BoomLive are prominent non-partisan fact-checking media organizations operating in India. They specialize in investigating viral social media rumors, identifying manipulated photographs, debunking fake news claims, and providing verified contextual evidence to combat online misinformation and

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digital media deception across messaging and social networks across the country overall.

97. (B) Misinformation involves unintentionally sharing inaccurate facts, whereas disinformation is false material created purposely to deceive others
The essential distinction between misinformation and disinformation centers on intent. Misinformation refers to false or inaccurate information shared without harmful intent by individuals who believe it to be true. Conversely, disinformation involves deliberately engineered false content created and spread with conscious intent to deceive, manipulate, or harm target audiences online.

98. (D) Personal user privacy and real-world physical security
Oversharing personal details on social media—such as real-time home addresses, location check-ins, travel itineraries, and financial status—poses severe threats to personal user privacy and physical safety. Malicious actors, burglars, cyberstalkers, and identity thieves exploit exposed personal data to commit real-world crimes, stalking, and identity fraud against unsuspecting individuals.

99. (A) Cyberstalking
Cyberstalking entails the continuous, obsessive monitoring of a target's online activity across social platforms. Practices like tracking geotagged check-ins, downloading personal photos without authorization, and sending persistent unwanted messages constitute cyberstalking, which is a punishable cybercrime violating personal safety, privacy, and digital communication laws in many legal jurisdictions globally.

100. (B) I, III, and IV
Statement II is incorrect because satirical outlets write humorous, fictional parodies rather than factual news. Statements I, III, and IV are accurate indicators for identifying news validity: reputable news sources cite verifiable authors, reverse image searches expose manipulated graphics, and excessive emotional language in headlines indicates clickbait content online.

101. (A) Combining uppercase letters, lowercase letters, numbers, and symbols
Creating strong, resilient passwords involves combining diverse character types, including uppercase letters, lowercase letters, numerical digits, and special symbols. Complex passwords maximize entropy, rendering them highly resistant to dictionary-based cracking, automated brute-force cyber attacks, and unauthorized profile access across digital social networking applications operating online today globally.

102. (D) Password Manager
A Password Manager is a software utility designed to create, store, and manage complex credentials within an encrypted digital vault. It securely generates unique, complex passwords for multiple social media profiles, reducing user reliance on predictable passphrases and protecting accounts from unauthorized cyber intrusions and credential theft online effective.

103. (B) The record of personal data traces left behind by an individual during digital internet and social media use
A digital footprint encompasses the cumulative trail of data left behind by an individual as a result of their online activities across web services and social media platforms. It incorporates published posts, comments, browsing histories, IP addresses, search logs, and device metadata, forming a permanent record of user web interaction.

104. (C) Deliberately posting a comment on a public Facebook page
An active digital footprint is created when a user intentionally submits or shares personal data online. Examples include publishing social media posts, writing public comments, or uploading photographs. In contrast, passive footprints are generated automatically in the background, such as server IP logs, location tracking, or website web tracking cookies.

105. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Permanently deleting content posted publicly on social media is difficult because digital information spreads rapidly across user networks. Other users can save images, capture screenshots, or share posts almost instantly upon publication, rendering local deletion by the original author ineffective, which makes the reason a correct explanation of the assertion.

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106. (A) Report the content directly to platform administrators
Reporting offensive, violent, or illegal content directly to platform administrators is the proper action when encountering policy violations on social platforms. Platform safety moderation teams review reported content against established community standards, taking corrective actions such as content removal, issuing formal policy warnings, or enforcing permanent account suspensions across platforms.

107. (B) Blocking prevents direct contact between users, whereas reporting alerts platform moderators to review flagged account behavior against guidelines
Blocking a user is a personal privacy control that severs profile visibility and direct messaging between two accounts without notifying platform administrators. Conversely, reporting flags an account or specific post to platform moderators, initiating an administrative review to determine whether the flagged user violated community guidelines or platform policies overall.

108. (B) The Information Technology Act, 2000
The Information Technology (IT) Act, 2000, is the primary legal framework in India governing cybercrime, electronic commerce, data security, and digital communications. It contains statutory provisions penalizing identity theft, cyberstalking, hacking, transmission of obscene content, and online fraud committed via internet networks or social media platforms across the country.

109. (A) Section 66A
Section 66A of the IT Act, 2000 criminalized sending offensive or menacing messages through electronic communication services. In the landmark 2015 *Shreya Singhal v. Union of India* ruling, the Supreme Court of India struck down Section 66A entirely, declaring it unconstitutional for violating fundamental rights to free speech and expression.

110. (B) I and III only
Practices I and III are unsafe digital habits: accepting friend requests from unknown individuals exposes personal profiles to security risks, and broadcasting continuous live location tags exposes real-world movements to potential cyberstalkers. Practice II represents a safe privacy habit by restricting post access strictly to trusted friends and contacts.

111. (D) Geotagging
Geotagging is the practice of embedding geographic identification metadata into media files, digital photographs, or social media updates. By attaching specific GPS coordinates, location names, or administrative regions to published content, geotagging allows social platforms and users to map, categorize, and identify where photos or posts originated around the world.

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112. (C) Browsing history, active cookies, and web session data are purged from local device memory
Incognito or Private Browsing mode ensures that browsing history, temporary site cookies, form entries, and cached files are automatically erased from local device storage upon closing the browser window. However, it does not hide network traffic from network administrators, internet service providers, or external host web servers online.

113. (B) Enhance software security while protecting user privacy from web tracking
Clearing browser cache and cookies periodically removes stored session trackers, temporary site files, and login cookies from local storage. This practice protects user privacy by eliminating persistent cross-site tracking scripts, resolving web display loading glitches, and mitigating security risks associated with session hijacking on public computers across networks.

114. (D) Share verified information published directly by official government or emergency services handles
During emergencies and natural disasters, responsible digital citizenship mandates sharing verified information sourced directly from official government handles, public disaster authorities, and emergency response services. Spreading unverified rumors or sensationalized posts exacerbates public anxiety, hinders relief operations, and complicates crisis management efforts for emergency responders operating in the region.

115. (C) 1930
In India, 1930 is the designated official National Cyber Crime Reporting Helpline number. Managed under the Ministry of Home Affairs, this dedicated helpline enables citizens

recruiters to filter profile data by specific technical skills like Java and SQL, past employment history, academic qualifications, industry certifications, and geographical locations, facilitating targeted candidate acquisition for corporate talent needs online.

78. (C) Business to Consumer
In commercial terminology and digital marketing, B2C stands for Business to Consumer. It describes commercial transaction processes and advertising strategies where businesses sell products, retail goods, or services directly to individual end consumers, utilizing social platforms to run direct consumer advertising and customer engagement campaigns across social platforms.

79. (D) MyGov
MyGov is an innovative citizen engagement platform launched by the Government of India in 2014. It actively leverages social media integration and digital crowdsourcing to connect citizens with government policymaking, enabling individuals to share creative ideas, provide constructive feedback, and participate directly in national governance initiatives across the nation.

80. (A) I and II only
Social media provides commercial entities with cost-effective promotional avenues and real-time customer service channels, making statements I and II correct. Statement III is false because social platforms supplement rather than replace proprietary company websites, which remain essential for secure transaction processing, brand authority, and centralized corporate data ownership and control.

81. (B) Netiquette
Netiquette, a blend of network and etiquette, defines the code of polite, respectful, and responsible behavior expected of individuals communicating across internet platforms. It encompasses guidelines such as refraining from abusive language, respecting personal privacy, avoiding typing in ALL CAPS, and verifying facts prior to sharing content online publicly.

82. (D) Continuously transmitting hostile, intimidating, or abusive communications to a targeted individual over internet channels
Cyberbullying involves the deliberate, persistent use of digital communication channels to harass, intimidate, threaten, humiliate, or target an individual. Hostile actions such as sending abusive direct messages, posting derogatory comments online, or spreading malicious rumors represent severe forms of cyberbullying that can inflict emotional harm and psychological distress on victims.

83. (A) Trolling
In digital culture, trolling describes the deliberate act of posting inflammatory, disruptive, deceptive, or off-topic comments online to provoke emotional reactions, instigate arguments, or disrupt constructive online conversations. Trolls exploit online anonymity to disturb virtual communities and harass other users for personal entertainment or malicious intent across public forums.

84. (C) Doxxing
Doxxing is a cyber threat practice involving the unauthorized collection and public release of an individual's private personal information, such as home address, phone number, financial details, or real identity. Perpetrators dox targets to intimidate, harass, publicly shame, or expose them to real-world security risks and harassment across the internet.

85. (B) Verify the source → Read beyond the headline → Check the date and author → Consult a fact-checking site → Share
Responsible digital information sharing requires systematic verification before disseminating news online. Users must first evaluate source credibility, read the full article context beyond headlines, inspect author credentials and publication dates, and cross-reference claims against recognized fact-checking databases before sharing articles with online networks and public social media groups.

86. (D) A realistic synthetic media recording generated by artificial intelligence that portrays an individual performing actions they never took
A deepfake refers to synthetic visual or audio media created using sophisticated artificial intelligence and deep learning algorithms. Deepfakes digitally replace a person's likeness, facial expressions, or voice with convincing accuracy, generating highly realistic fake video recordings or audio clips depicting individuals making statements or performing actions they never made.

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maintain regulatory compliance and enforce community guidelines against hate speech, violence, and illegal content to provide a safe online environment, the reason directly explains why platforms deploy robust content moderation systems globally.

126. (C) Crowdsourcing critical information to locate urgent blood donors for a victim
Crowdsourcing urgent medical assistance, such as searching for compatible blood donors during critical medical emergencies, exemplifies the public welfare benefits of social platforms. Networks facilitate rapid information broadcasting, reaching extensive user communities instantaneously to mobilize emergency resources and coordinate real-time life-saving community support during emergency situations across regions.

127. (D) Remediation and cleaning of botnets and malicious software from citizen computing devices
Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre) is a key Digital India initiative operated by CERT-In. It aims to create a secure Indian cyberspace by analyzing malware infections, detecting botnet activities, and providing citizens with free tools to remediate and clean infected personal computing devices nationwide.

128. (C) Meme
An internet meme is a cultural concept, image, video clip, or piece of text that spreads rapidly between internet users through social networks. Memes feature humorous variations or altered captions applied to iconic image templates, serving as a popular format for online expression, political commentary, and viral digital communication online.

129. (B) By evaluating personal interaction history, likes, and engagement patterns to curate relevant content for your feed
Social media feed algorithms analyze various signals to personalize user content feeds dynamically. Instead of displaying posts in purely chronological order, algorithms evaluate user interaction history, recent likes, comments, watch durations, post relevance, and connection strength to predict and prioritize content most likely to engage the user effectively.

130. (B) I, II, and IV
Responsible digital etiquette promotes respectful and safe online behavior. Users should seek permission before posting others' photographs, avoid writing in ALL CAPS because it is often interpreted as shouting, and give proper credit to the original creator when sharing content. Responding aggressively to internet trolls usually worsens conflicts and is discouraged. Therefore, statements I, II, and IV are correct, while statement III is incorrect.

131. (A) Shadowbanning
Shadowbanning is the practice where a social media platform limits the visibility of a user's posts without informing the user directly. Although the content remains visible to the creator, it reaches fewer people due to reduced distribution. Platforms may use this measure to control spam, misinformation, or repeated violations of community guidelines while avoiding immediate account suspension.

132. (C) User Interface
UI stands for User Interface, which includes the visual elements of an application such as buttons, menus, icons, and screen layouts through which users interact with the software. Together with UX (User Experience), it determines how simple, attractive, and efficient an application is to use. A well-designed UI improves accessibility, navigation, and overall user satisfaction.

133. (A) An open-source, decentralized microblogging platform network
Mastodon is an open-source, decentralized social networking platform consisting of independently operated servers that communicate through a common protocol. Unlike centralized platforms such as X (formerly Twitter), no single organization controls the entire network. Users can join different communities while still interacting across servers, giving greater flexibility, transparency, and control over their online experience.

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134. (D) A set of policies specifying acceptable behavior and restricted content
Community Guidelines are the rules established by social networking platforms to define acceptable user behavior and prohibited content. They help maintain a safe and respectful online environment by restricting activities such as harassment, hate speech, misinformation, spam,

to report financial cyber frauds and digital security incidents immediately, facilitating swift intervention, freezing stolen funds, and initiating cyber police law enforcement actions nationally.

116. (C) Catfishing
Catfishing refers to creating a deceptive online persona or fake profile on social networking or dating applications to trick targets into romantic relationships or financial extortion. Perpetrators exploit stolen photographs, fabricated identity details, and deceptive emotional manipulation to deceive victims for personal, deceptive, or monetary advantage across digital platforms.

117. (A) Manipulating individuals into revealing confidential credentials or taking risky actions
Social engineering in digital security describes psychological manipulation techniques used by cybercriminals to trick individuals into divulging confidential information, such as passwords, OTPs, or banking credentials. Rather than exploiting software vulnerabilities directly, social engineering exploits human trust, urgency, or fear to compromise account security across social media platforms.

118. (D) Virtual Private Network
VPN stands for Virtual Private Network. It creates an encrypted communication tunnel between a user's device and a remote VPN server, hiding the user's real IP address and masking network traffic. VPNs safeguard data privacy on public Wi-Fi networks and allow users to bypass geographical content restrictions online easily.

119. (B) CERT-In
CERT-In (Indian Computer Emergency Response Team) is the nodal national agency operating under the Ministry of Electronics and Information Technology in India. It responds to cybersecurity threats, issues advisories regarding software vulnerabilities, tracks malware outbreaks, and formulates incident mitigation strategies to safeguard digital networks and platforms across the entire country.

120. (A) P-1, Q-2, R-3, S-4
Sections of the Indian Information Technology Act match their legal definitions: Section 66C establishes penalties for identity theft; Section 66E penalizes privacy violations involving private image capture; Section 67 addresses transmitting obscene electronic material; and Section 69A empowers the government to issue website blocking directions for public safety.

121. (D) Terms of Service (ToS) or User Agreement
Terms of Service (ToS) or User Agreements represent legally binding contracts governing the relationship between a software platform and its registered account holders. These agreements specify platform operational rules, acceptable conduct, copyright policies, data privacy guidelines, account termination protocols, and user responsibilities required to maintain active account status on platforms.

122. (A) Copyright Infringement
Uploading copyrighted films, television shows, or musical tracks without explicit permission from copyright owners constitutes copyright infringement. Social platforms deploy automated content monitoring systems, such as Content ID, to detect unauthorized media uploads, removing infringing files to comply with digital intellectual property laws and liability regulations on web platforms.

123. (B) Plagiarism
Plagiarism involves copying another individual's written posts, creative text, ideas, or intellectual artwork and republishing it online while presenting it as one's own original creation. In digital communities, copying content without proper attribution or tagging violates academic integrity, professional ethics, and community posting norms across online social channels.

124. (B) They receive 'safe harbor' protection from user content liabilities, contingent upon exercising due diligence and honoring removal mandates
Under Indian IT Rules, social networking services are classified as intermediaries, granting them safe harbor immunity from legal liability regarding user-generated content. This protection requires intermediaries to exercise statutory due diligence, remove unlawful content upon official government or court mandates, and maintain designated grievance officers within the country territory.

125. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Social media platforms combine automated AI moderation algorithms with human reviewers to filter content. Because platforms must

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CHAPTER 14
E-Governance

1. Which of the following best defines the term 'e-Governance'?
(A) The use of electronic commerce to sell government assets
(B) The application of Information and Communication Technology (ICT) for delivering government services
(C) The process of replacing all government officials with artificial intelligence
(D) The manufacturing of electronic devices by government organizations

2. An online portal allowing citizens to pay their electricity and water bills is an example of which e-Governance model?
(A) G2G (Government to Government)
(B) G2B (Government to Business)
(C) G2E (Government to Employee)
(D) G2C (Government to Citizen)

3. Match the e-Governance models in List I with their appropriate examples in List II.
List I: (Models)
P. G2C
Q. G2B
R. G2G
S. G2E
List II: (Examples)
1. Online corporate tax filing
2. Applying for an income certificate
3. Processing leave applications for civil servants
4. Sharing data between state and central treasuries
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-2, Q-4, R-1, S-3

4. The e-Procurement portal used by the government to invite tenders from private contractors falls under which category?
(A) G2C
(B) G2G
(C) G2B
(D) G2E

5. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): E-Governance increases transparency and reduces corruption in public service delivery.
Reason (R): E-Governance minimizes direct human interface between the citizen and the government official.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

6. A government intranet portal that allows public servants to download their salary slips and update their service records is an example of:
(A) G2C
(B) G2B
(C) G2G
(D) G2E

7. The National Informatics Centre (NIC), which plays a pivotal role in steering e-Governance applications in India, was established in which year?
(A) 1976
(B) 1985
(C) 1998
(D) 2005

8. The National e-Governance Plan (NeGP) in India was initially formulated and approved in which year?
(A) 2000
(B) 2006
(C) 2014
(D) 2018

9. Consider the following statements regarding the core infrastructure components of the National e-Governance Plan (NeGP):
I. State Wide Area Networks (SWAN)
II. State Data Centres (SDC)
III. Common Service Centres (CSC)

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and illegal content. Violating these guidelines may result in warnings, content removal, reduced visibility, or suspension of the user's account.

135. (B) II and III only
Using the same password for multiple social media accounts increases security risks because compromising one account can expose others. Logging out after using shared or public computers prevents unauthorized access, while reviewing active login sessions helps identify suspicious devices or unauthorized sign-ins. Therefore, statements II and III are correct, whereas statement I is incorrect.

136. (C) The sender and the receiver only
End-to-end encryption ensures that only the sender and the intended receiver can read the contents of a message. The message is encrypted before leaving the sender's device and can only be decrypted on the recipient's device. Even the service provider cannot access the message content, making this one of the most effective methods of protecting user privacy.

137. (D) Smishing
Smishing is a form of phishing carried out through fraudulent SMS or text messages. Cybercriminals often impersonate banks, government agencies, or trusted companies to trick users into clicking malicious links or revealing sensitive information such as passwords, OTPs, or banking details. Users should verify suspicious messages and avoid responding to or opening unknown links.

138. (A) The POCSO Act
If cyberbullying involves a minor and includes sexually explicit content, stringent legal provisions may apply under both the Information Technology Act and the Protection of Children from Sexual Offences (POCSO) Act. The POCSO Act provides strong legal protection for children against sexual exploitation, abuse, and the creation or sharing of explicit material involving minors.

139. (B) Evaluating the factual accuracy and source credibility of digital content prior to sharing it online
Responsible social networking requires users to verify the authenticity and credibility of information before sharing it. Fact-checking helps prevent the spread of misinformation, fake news, and misleading content. Users should rely on trusted sources, read beyond headlines, and avoid forwarding unverified posts. Such responsible behavior contributes to a safer and more informed online community.

140. (A) P-3, Q-4, R-2, S-1
WhatsApp is primarily used for instant messaging and VoIP calling, Instagram focuses on visual content through photos, reels, and stories, LinkedIn is designed for professional networking and career opportunities, while X (formerly Twitter) specializes in microblogging and real-time public conversations. Therefore, the correct matching is P-3, Q-4, R-2, and S-1.

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List II: (Domains)
1. Agriculture income support
2. Vehicle registration
3. Telemedicine
4. Land records

(A) P-2, Q-4, R-3, S-1
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-2, S-4

20. The concept of delivering government services and information to the public using cellular phones and wireless devices is specifically known as:
(A) c-Governance
(B) m-Governance
(C) w-Governance
(D) t-Governance

21. What is the primary purpose of the 'Jansunwai' portal (Samadhan) launched by the Uttar Pradesh Government?
(A) Booking state transport buses
(B) Filing state goods tax returns
(C) Citizen grievance redressal
(D) Issuing new voter identity cards

22. In Uttar Pradesh, the 'e-Sathi' mobile application is primarily designed to help citizens access services related to:
(A) e-District portal services
(B) Hospital appointment booking
(C) Traffic challan online payments
(D) Agricultural land record checking

23. Consider the following services provided under the e-District portal in Uttar Pradesh:
I. Issuance of Domicile (Nivas) Certificate
II. Issuance of Income (Aay) Certificate
III. Issuance of Passport
Which of the above statement(s) is/are incorrect?
(A) I only
(B) II only
(C) III only
(D) I and II only

24. The e-District project is implemented at the state level under which overarching national programme?
(A) Make in India Flagship Programme
(B) Startup India National Initiative
(C) Skill India Mission Scheme
(D) National e-Governance Plan (NeGP)

25. What is the official toll-free Chief Minister Helpline Number in Uttar Pradesh for quick grievance redressal?
(A) 1076
(B) 1090
(C) 112
(D) 1098

26. Which digital initiative of the UP Government serves as a single-window system for providing clearances to entrepreneurs and businesses?
(A) Nivesh Mitra
(B) UP Bhulekh
(C) e-Mandi
(D) Shasanadesh

27. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Jansunwai portal has reduced the physical crowding at government offices in UP.
Reason (R): Citizens can register complaints online and track their status using a unique reference number from home.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

28. To apply for an Income Certificate online in Uttar Pradesh, a citizen can directly use which of the following platforms?
(A) Vahan Transport Portal
(B) e-Courts Services Portal
(C) e-District UP Portal
(D) e-Challan Online Portal

29. The Nivesh Mitra portal of Uttar Pradesh is an example of which type of e-Governance interaction?
(A) G2B
(B) G2C
(C) G2G
(D) G2E

30. What is the full form of SWAN in the context of the National e-Governance Plan?
(A) System Wide Access Node
(B) Secure Wireless Area Network
(C) State Wireless Access Network
(D) State Wide Area Network

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31. The Aadhaar card, which forms the basis for many e-Governance services, consists of how many digits?
(A) 10
(B) 12
(C) 14
(D) 16

32. What is the full form of UIDAI, the authority responsible for issuing Aadhaar?
(A) Universal Identity Document Authority of India
(B) Unique Identification Authority of India
(C) United Identification Agency of India
(D) Unique Identity Data Authority of India

33. Consider the following statements about the Aadhaar system:
I. It captures both demographic and biometric information.
II. It is proof of citizenship of India.
III. It can be authenticated online in real-time.
IV. It uses iris and fingerprint scans for biometrics.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II, III, and IV only
(D) I, II, and IV only

34. In Uttar Pradesh, an Income Certificate issued through the e-District portal is typically valid for how long from the date of issuance?
(A) 1 year
(B) 3 years
(C) 5 years
(D) Lifetime

35. The term 'e-PDS' refers to the use of e-Governance in which crucial public sector?
(A) Public Debt System
(B) Police Department Services
(C) Public Distribution System
(D) Primary Dispensary Services

36. Match the following UP state portals in List I with their purpose in List II.
List I: (Portals)
P. UP Bhulekh
Q. Shasanadesh
R. Prerna
S. Jansunwai
List II: (Purposes)
1. Basic Education Information
2. Land Records
3. Grievance Redressal
4. Government Orders
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-3, S-1
(C) P-1, Q-3, R-2, S-4
(D) P-2, Q-1, R-4, S-3

37. What is the full form of AePS in the context of Indian digital payments?
(A) Automated electronic Payment System
(B) Aadhaar electronic Processing System
(C) Advance electronic Payment Solution
(D) Aadhaar enabled Payment System

38. Which of the following is absolutely required by a citizen to withdraw cash from a micro-ATM using the AePS facility at a Common Service Centre?
(A) Aadhaar number and biometrics
(B) An active smartphone with internet access
(C) A physical debit card with PIN
(D) A registered email address account

39. Which government official's digital signature is generally affixed on a Caste Certificate issued through the e-District portal in Uttar Pradesh?
(A) District Magistrate
(B) Superintendent of Police
(C) Tehsildar / SDM
(D) Block Development Officer

40. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): Aadhaar ensures that benefits under welfare schemes reach the intended beneficiaries without duplication.
Reason (R): The biometric deduplication process ensures that no individual can hold more than one Aadhaar number.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

41. Under the PM-KISAN scheme, eligible farmers receive financial assistance through Direct Benefit Transfer (DBT). What is the total annual amount transferred per beneficiary?
(A) ₹ 4,000
(B) ₹ 6,000
(C) ₹ 8,000

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(D) ₹ 12,000

42. The 'Kisan Suvidha' mobile application provides Indian farmers with information regarding which of the following?
(A) Online streaming of agricultural movies
(B) Booking train tickets for goods transport
(C) Applying for rural housing loans only
(D) Weather updates and market prices

43. What is the full form of UPI, the system widely used for online payment and fee deposit in e-Governance platforms?
(A) Unified Payments Interface
(B) Universal Payment Interface
(C) United Payment Integration
(D) Unique Payment Interface

44. Consider the following statements regarding the online Right to Information (RTI) process:
I. Citizens can file an RTI application online using the RTI portal.
II. RTI applications cannot be filed by Non-Resident Indians (NRIs).
III. The online portal allows for payment of RTI fees via internet banking or cards.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

45. The Right to Information (RTI) Act, which enabled transparency mechanisms including online RTI portals, was enacted in India in the year:
(A) 2000
(B) 2005
(C) 2008
(D) 2012

46. Under the normal provisions of the RTI Act, a Public Information Officer (PIO) is required to provide information to an applicant within how many days?
(A) 15 days
(B) 30 days
(C) 45 days
(D) 60 days

47. Which platform, developed by NPCI, offers an interoperable and accessible bill payment service to customers across India, commonly used for paying electricity and water bills online?
(A) SWAN
(B) NKN (National Knowledge Network)
(C) E-Taal
(D) Bharat BillPay (BBPS)

48. What is the full form of e-NAM in the agriculture sector?
(A) Electronic National Agriculture Market
(B) Electronic Network of Agricultural Mandis
(C) Empowered National Agriculture Mission
(D) Electronic Nationwide Agriculture Management

49. Arrange the following steps in the correct logical sequence for filing an online RTI application:
1. Make the online fee payment.
2. Select the relevant Ministry/Department.
3. Submit the application and note the registration number.
4. Fill in personal details and the text of the RTI request.
(A) 2, 4, 1, 3
(B) 4, 2, 1, 3
(C) 2, 1, 4, 3
(D) 4, 1, 2, 3

50. The PM-KISAN portal, an example of e-Governance in agriculture, is monitored at the central level by which ministry?
(A) Ministry of Rural Development
(B) Ministry of Finance and Corporate Affairs
(C) Ministry of Agriculture
(D) Ministry of Panchayati Raj Affairs

51. A 'Citizen Charter' in a government department primarily represents:
(A) A legally binding contractual agreement to prosecute government agencies in court
(B) A formal declaration of service standards, timelines, and grievance redressal
(C) A comprehensive municipal registry of all citizens residing in a local government area
(D) A specialized enterprise software application used to issue official digital certificates

52. What is the full form of CSC in the context of the National e-Governance Plan?
(A) Central Security Centre
(B) Citizen Support Council
(C) Computer Service Centre
(D) Common Service Centre

53. Common Service Centres (CSCs) are primarily operated at the village level by local entrepreneurs known as:
(A) Gram Rozgar Sahayaks (GRS)

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file that exceeds a total storage size of ten gigabytes
(D) The entire physical collection of paper files and folders stored in a central government record room

89. Emerging technologies like 'Blockchain' are being tested in e-Governance (e.g., for land registries) primarily because blockchain offers:
(A) Substantially higher fiber-optic internet connection speeds for administrative servers
(B) Providing subsidized free electrical power for running district computer workstations
(C) Advanced lossy compression algorithms for high-definition streaming video files
(D) A decentralized, tamper-proof ledger of records

90. Consider the following digital initiatives launched by the Uttar Pradesh government:
I. UP Bhulekh
II. Nivesh Mitra
III. e-Sathi
IV. Prerna
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

91. A citizen booking a train ticket through the IRCTC website is engaging in which model of e-Governance?
(A) G2B
(B) G2C
(C) G2G
(D) G2E

92. A private company filing its annual GST returns on the government GST portal is an example of:
(A) G2C
(B) G2G
(C) G2B
(D) G2E

93. The integration of the UP State Treasury software with the Reserve Bank of India's e-Kuber system is an example of:
(A) G2C
(B) G2B
(C) G2G
(D) G2E

94. A government teacher applying for casual leave through the Manav Sampada portal (ehrms.upsdc.gov.in) is participating in which model?
(A) G2C
(B) G2B
(C) G2E
(D) G2G

95. The 'eTaal' (Electronic Transaction Aggregation & Analysis Layer) web portal developed by NIC provides what specific information?
(A) Real-time GPS tracking and timetable management of all public state-run commercial bus transport networks
(B) Aggregating electronic transaction counts of e-Governance projects
(C) A comprehensive verified contact directory of email addresses and phone numbers for all serving civil servants
(D) Provision of free downloadable enterprise antivirus software packages for personal desktop computers

96. Which ICT-based platform, launched by the Prime Minister of India, is used for Pro-Active Governance and Timely Implementation, involving video conferencing with state and central officials?
(A) PRAGATI
(B) DISHA
(C) SWAYAM
(D) UMANG

97. If a farmer in Uttar Pradesh wants to view the computerized copy of their 'Khatauni' (Record of Rights), they should visit which portal?
(A) UP RERA
(B) e-Courts
(C) Vahan
(D) UP Bhulekh

98. The 'MyGov' platform, designed to promote citizen participation in governance, was launched by the Government of India in the year:
(A) 2010
(B) 2012
(C) 2014
(D) 2016

99. What is the core objective of the MyGov (mygov.in) platform?
(A) To process and issue motor vehicle driving licenses and learner permits online
(B) Facilitating citizen participation in policy

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(D) Improved transparency and accountability

63. Consider the following challenges in the implementation of e-Governance in rural India:
I. Lack of digital literacy among the rural population
II. Frequent power outages and poor internet connectivity
III. High proficiency of citizens in using English interfaces
Which of the above statement(s) is/are valid challenges?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

64. Which of the following best describes the difference between e-Governance and m-Governance?
(A) e-Governance services are strictly for commercial businesses, whereas m-Governance services are only for individual citizens
(B) m-Governance is e-Governance delivered via mobile devices
(C) e-Governance networks rely entirely on satellite signals, whereas m-Governance uses underwater fiber-optic cables
(D) There is no legal distinction; both terms refer to identical electronic service delivery models under current law

65. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Digital Divide is a major challenge for the complete success of e-Governance in India.
Reason (R): Not all citizens have access to smartphones, internet connectivity, or the skills to use digital platforms.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

66. What is the full form of USSD, a technology used for m-Governance services on basic feature phones without internet?
(A) Unstructured Supplementary Service Data
(B) Universal Standardized Security Data Protocol
(C) United States Server Domain Architecture
(D) Unified System Service Data Interface

67. To access basic banking or telecom services via USSD on a mobile phone without internet, a user typically dials a code starting with:
(A) &
(B) @
(C) $
(D) *

68. Which of the following best addresses the challenge of the "Language Barrier" in Indian e-Governance?
(A) Developing multilingual portals supporting regional languages
(B) Mandating that all online government portals operate exclusively in the English language
(C) Temporarily banning the deployment and use of computers across rural administrative centers
(D) Requiring all adult citizens to complete mandatory certification in computer programming languages

69. In e-Governance terminology, "Interoperability" refers to:
(A) The systemic technical inability of an individual citizen to securely log into an official online portal
(B) The manual operational process of executing computerized tasks by administrative staff during power grid failures
(C) Ability of different IT systems to exchange data seamlessly
(D) The specialized physical security personnel assigned to guard sensitive infrastructure at State Data Centres

70. Select the correct order representing the descending hierarchy of e-Governance project deployment scopes in India:
(A) National Level → State Level → District Level → Panchayat Level
(B) Panchayat Level → District Level → State Level → National Level
(C) District Level → National Level → Panchayat Level → State Level
(D) State Level → Panchayat Level → National Level → District Level

71. The "National Awards for e-Governance" in India are presented annually by the Department

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of Administrative Reforms and Public Grievances (DARPG). These awards primarily recognize:
(A) Leading domestic and international computer hardware manufacturing companies operating in India
(B) Individual citizens and corporate entities who consistently pay the highest income tax through online portals
(C) Excellence in e-Governance implementation
(D) Certified international ethical hackers who discover and report severe cybersecurity vulnerabilities in government systems

72. What is the main objective of the e-Courts Mission Mode Project in India?
(A) To completely replace human judicial officers and judges with automated artificial intelligence systems
(B) To commercially monetize and sell confidential government legal documents exclusively to private law firms
(C) To construct modern physical courtroom infrastructure and district judicial complexes across all states
(D) Computerization of courts and enabling online case tracking

73. In the e-Courts service portal, a citizen can track the status of their case using a 16-digit alphanumeric number known as:
(A) CNR Number
(B) PNR Number
(C) UAN Number
(D) IFSC Code

74. What is the full form of CCTNS, a major e-Governance project in the police sector?
(A) Centralized Computer Tracking and Networking Service
(B) Citizens and Courts Tracking Network System
(C) Crime and Criminal Tracking Network & Systems
(D) Cyber Crime Tracking Node Software

75. The CCTNS project aims to integrate data primarily among which set of institutions across the country?
(A) Government Hospitals
(B) Revenue Offices
(C) Post Offices
(D) Police Stations

76. Consider the following services available through the e-Courts portal and mobile app:
I. Viewing case status
II. Viewing cause lists (list of cases to be heard)
III. Downloading final judgments and court orders
IV. Issuing death sentences directly online
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

77. In Uttar Pradesh, citizens can register e-FIRs for unknown vehicle theft and minor thefts via which official mobile application?
(A) UP RERA
(B) UP Bhulekh
(C) UP COP
(D) UP Sarthi

78. An 'e-Challan' is an e-Governance service related to which of the following activities?
(A) Municipal collection of annual urban property tax payments
(B) Online processing and repayment of agricultural farm loans
(C) Submitting digital tender documents for public works contracts
(D) Electronic issuing of traffic fines

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79. Match the following common Sections of the Information Technology Act, 2000 in List I with their related offences in List II.
List I: (Sections)
P. Section 43
Q. Section 65
R. Section 66
S. Section 67
List II: (Offences)
1. Tampering with computer source documents
2. Penalty for damage to computer, computer system, etc.
3. Publishing of obscene information in electronic form
4. Computer related offences (including hacking)
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-2, Q-4, R-1, S-3

80. The 'UP COP' application provides which of the following citizen-centric services without the need to visit a police station?
(A) Character certificate verification
(B) Applying for a driving license
(C) Filing an RTI with the Prime Minister's Office
(D) Applying for an Aay (Income) Praman Patra

81. How is Artificial Intelligence (AI) commonly being utilized on government web portals (such as the IRCTC or UIDAI websites) for basic citizen interaction?
(A) To automatically and physically print paper documents at administrative kiosks
(B) Through AI Chatbots to answer user queries
(C) To permanently purge and delete archived citizen database records automatically
(D) To systematically upscale and expand the graphic file size of scanned images

82. In e-Police services, data analytics is often used for 'Predictive Policing'. What does this mean?
(A) Detaining and arresting suspect citizens before any alleged crime takes place based on astrological predictions
(B) Automatically fabricating and generating inflated crime statistics reports to secure larger government budgetary funding
(C) Using historical crime data to predict crime hotspots
(D) Implementing an online digital platform enabling local citizens to vote directly on executive police officer promotions

83. In the agriculture sector, AI and data analytics are increasingly being explored by the government for which of the following purposes?
(A) Completely replacing rural human farmers with fully autonomous agricultural field robots
(B) Legally mandating all smallholder farmers to purchase costly specialized farm management AI software
(C) Systematically re-zoning and converting fertile agricultural farmland into municipal cloud data centers
(D) Crop yield prediction and pest detection via imagery

84. The 'CM Dashboard - Darpan' implemented by the Uttar Pradesh government is an analytical tool used primarily for:
(A) Providing interactive digital entertainment and video games for state government administrative staff during office breaks
(B) Real-time monitoring of flagship schemes and projects
(C) Enabling local state citizens to publicly upload their personal daily selfies for civic engagement rewards
(D) Monitoring and tracking commercial international flight schedules and global air traffic control operations

85. The Government of India's cloud computing initiative, which aims to optimize the usage of ICT infrastructure for e-Governance, is named:
(A) VayuCloud
(B) GI Cloud (MeghRaj)
(C) BharatStorage
(D) NationalDrive

86. In the context of e-Governance and data security, what does "Data Localization" mean?
(A) Exclusively storing official state government data on local desktop hard drives without maintaining any offsite digital backups
(B) Automatically translating all digitized administrative public records into local regional languages without retaining master files
(C) Compulsorily sharing all confidential individual citizen data records with local village panchayat executive offices
(D) Mandating that data collected in a country be stored on servers within its borders

87. Consider the following benefits of using Artificial Intelligence and Data Analytics in e-Governance:
I. Detecting fraud in tax filings and subsidy distributions.
II. Analyzing large datasets to make evidence-based policy decisions.
III. Ensuring a 100% crime-free society instantly.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

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88. The term 'Big Data' in e-Governance refers to:
(A) Large datasets analyzed computationally to reveal patterns
(B) A high-capacity enterprise hard disk drive unit installed physically inside a main server rack
(C) Any individual digital document or PDF

(B) Blood Banks
(C) Grain Silos
(D) EV Charging Stations

111. On a government portal, you notice "https://" and a padlock symbol in the web browser's address bar. This indicates the presence of which security certificate?
(A) SSL (Secure Sockets Layer)
(B) ISO 9001
(C) CMMI Level 5
(D) HTML5

112. In the context of government networks (like SWAN), what is the primary role of a 'Firewall'?
(A) To prevent network server hardware components from catching physical fire during electrical surges
(B) To monitor and control network traffic based on security rules
(C) To automatically perform real-time back ups of critical administrative database files onto remote cloud servers
(D) To significantly increase the bandwidth and transfer speed of local office internet connections

113. While registering on the UP e-District portal, you are asked to type distorted letters and numbers shown in an image. This test, called CAPTCHA, is used to:
(A) Evaluate and test the visual acuity and color vision of the accessing individual user
(B) Distinguish human users from automated bots
(C) Securely encrypt the user's plaintext account password prior to database transmission
(D) Automatically compress the resolution and overall file size of uploaded user profile images

114. For most e-Governance transactions requiring an OTP (One Time Password), the OTP is typically valid for how long?
(A) A few minutes (e.g., 5 to 10 minutes)
(B) Exactly 24 hours
(C) One week
(D) Until the user decides to change it

115. The BHIM (Bharat Interface for Money) app is based on which underlying digital payment technology?
(A) NEFT
(B) RTGS
(C) IMPS
(D) UPI

116. Which of the following is an immediate, 24x7 inter-bank electronic fund transfer service commonly used for mobile banking in India?
(A) NEFT
(B) RTGS
(C) Cheque Truncation System (CTS)
(D) IMPS (Immediate Payment Service)

117. If a citizen or business wishes to transfer a very large amount (say ₹ 5 Lakhs) instantly to a government account via bank transfer, RTGS is used. What is the minimum limit for an RTGS transaction?
(A) ₹ 10,000
(B) ₹ 50,000
(C) ₹ 1,00,000
(D) ₹ 2,00,000

118. Which Indian organization has developed the RuPay card scheme to promote domestic electronic payments?
(A) Reserve Bank of India (RBI)
(B) State Bank of India (SBI)
(C) National Payments Corporation of India (NPCI)
(D) Ministry of Finance

119. The 'e-RUPI', launched by the Indian government, is best described as:
(A) A newly minted physical paper currency note issued directly by the Reserve Bank of India
(B) A decentralized blockchain-based cryptocurrency asset similar to Bitcoin or Ethereum
(C) A physical plastic credit card distributed free of cost to all taxpaying adult citizens
(D) A cashless digital payment voucher delivered via SMS or QR code

120. Electronic toll collection on highways, which streamlines transport governance, is done using FASTag. FASTag works on which technology?
(A) RFID (Radio Frequency Identification)
(B) NFC (Near Field Communication)
(C) Bluetooth
(D) Infrared

121. Regarding a 'Citizen Charter' published by a government department, which of the following statements is legally true?
(A) It represents a statutory document that is

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making
(C) To act as a direct digital marketplace for agricultural farmers to trade and sell produce
(D) To receive and process online passport applications and verification scheduling

100. In e-Governance schemes, DBT stands for Direct Benefit Transfer. What is the mechanism of DBT?
(A) Physically delivering paper currency cash directly to the beneficiary's doorstep via a postal courier service
(B) Distributing paper subsidy vouchers and coupons to beneficiaries to exchange for essential commodities at private retail shops
(C) Automatically deducting state income taxes directly from a public sector employee's monthly net salary statement
(D) Direct bank account transfer of subsidy amounts to beneficiaries

101. What is the maximum file size permitted for a citizen to manually upload a document to their DigiLocker 'Uploaded Documents' section?
(A) 1 MB
(B) 10 MB
(C) 50 MB
(D) 100 MB

102. To ensure inclusivity, the UMANG application is available in how many major Indian languages (including English)?
(A) 5
(B) 13
(C) 22
(D) 30

103. The Unique Identification Authority of India (UIDAI) was established as a statutory authority under the provisions of which Act?
(A) The Information Technology Act, 2000
(B) The Right to Information Act, 2005
(C) The Consumer Protection Act, 2019
(D) The Aadhaar Act, 2016

104. Which of the following is NOT a valid mode of Aadhaar authentication?
(A) Blood Type matching
(B) OTP (One Time Password) based
(C) Biometric (Fingerprint/Iris) based
(D) Face Authentication

105. The 'e-Sign' service in India provides an easy and secure way to digitally sign documents. It is fundamentally based on authentication using which credential?
(A) PAN Card
(B) Aadhaar Number
(C) Ration Card
(D) Driving License

106. In DigiLocker, documents are classified into 'Issued Documents' and 'Uploaded Documents'. Which statement is true regarding them?
(A) User-uploaded documents automatically possess identical unconditional legal validity to original physical documents under all sections of the IT Act.
(B) Neither user-uploaded documents nor agency-issued documents possess any valid legal standing under current Indian information technology laws.
(C) Once a user uploads a personal document file to cloud storage, it becomes permanently immutable and cannot be deleted by the account holder.
(D) Issued documents fetched from source databases hold parity with physical originals.

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107. Through the UMANG app, employees can check their provident fund balance and raise claims. Which organization's services are integrated for this?
(A) RBI
(B) EPFO (Employees' Provident Fund Organisation)
(C) SEBI
(D) LIC

108. Which UP government portal facilitates farmers in selling their agricultural produce at competitive prices in regulated markets online?
(A) e-Sathi
(B) Nivesh Mitra
(C) e-Mandi (e-NAM integration)
(D) Shasanadesh

109. The UP RERA online portal is meant to regulate and bring transparency in which sector?
(A) Agriculture and Farming
(B) Police and Traffic
(C) Primary Education
(D) Real Estate and Construction

110. The 'e-RaktKosh' portal is an e-Governance initiative implemented to centralize the network of:
(A) Police Armouries

(B) Block Development Officers (BDO)
(C) Village Level Entrepreneurs (VLE)
(D) Panchayat Secretaries

54. Match the following data security threats in e-Governance in List I with their basic descriptions in List II.
List I: (Threats)
P. Phishing
Q. Malware
R. DDoS
S. Man-in-the-Middle (MitM)
List II: (Descriptions)
1. Intercepting communication between two parties
2. Overwhelming a server with fake traffic to bring it down
3. Malicious software designed to damage or disrupt systems
4. Fraudulent emails designed to trick users into revealing passwords
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1
(D) P-1, Q-3, R-2, S-4

55. To ensure data security during the transmission of an online payment on a government portal, which technology is primarily used to scramble the data?
(A) Formatting
(B) Defragmentation
(C) Encryption
(D) Compression

56. What is the primary objective of the Right to Service Act enacted by various state governments, including Uttar Pradesh?
(A) To ensure timely delivery of public services to citizens
(B) To guarantee mandatory career promotions for senior state civil servants
(C) To legally mandate citizens to perform unpaid local community service tasks
(D) To systematically privatize all municipal and essential public utility services

57. Consider the following statements regarding the role of Common Service Centres (CSCs):
I. They act as front-end delivery points for government, private, and social sector services to rural citizens.
II. They provide digital literacy and skill development courses.
III. They have the authority to print currency notes.
IV. They facilitate utility bill payments and banking services.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) I, II, and IV only
(D) II, III, and IV only

58. What does VLE stand for in the CSC ecosystem?
(A) Virtual Learning Environment
(B) Village Local Enterprise
(C) Visual Layout Editor
(D) Village Level Entrepreneur

59. When an e-Governance portal requires a password and then sends an OTP to your mobile phone before logging in, this security feature is called:
(A) Single Sign-On (SSO)
(B) Two-Factor Authentication (2FA)
(C) Biometric Scanning
(D) End-to-End Encryption

60. A citizen receives an email claiming to be from the Income Tax Department, asking them to click a link and enter their bank details to receive a refund. This is an example of which cyber attack?
(A) Ransomware
(B) SQL Injection
(C) Phishing
(D) Denial of Service

61. In the context of implementing e-Governance, the term "Digital Divide" refers to:
(A) The physical geographical distance separating major data servers across a network infrastructure
(B) The gap between those with access to modern ICT and those without
(C) The structural logical division of local hard drive storage into separate operating system partitions
(D) The administrative legal separation between individual citizen data records and private corporate databases

62. Which of the following is considered a primary benefit of e-Governance?
(A) Increased paperwork and file handling
(B) High implementation cost
(C) Requirement of internet for all basic tasks

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fully legally enforceable in a court of law
(B) Non-enforceable legally, acting as an accountability tool
(C) Any non-compliance or procedural violation results in automatic suspension of the executive department head
(D) Only the President of India or State Governors possess the constitutional authority to issue a Citizen Charter

122. The e-District project is designed to deliver government services primarily at which administrative level?
(A) Gram Panchayat Level
(B) District Level
(C) State Capital Level
(D) National Capital Level

123. The CSC 2.0 scheme under Digital India aims to establish at least one Common Service Centre at which level across the country?
(A) Every District
(B) Every Tehsil
(C) Every Gram Panchayat
(D) Every Municipal Corporation

124. The 'Tele-Law' service available at Common Service Centres (CSCs) aims to provide citizens with:
(A) Pre-litigation legal advice via video conferencing
(B) Automated digital issuance of judicial arrest warrants and police summons online
(C) Continuous high-definition live streaming of all Supreme Court and High Court proceedings
(D) Direct legislative facility allowing citizens to introduce and vote to modify statutory laws

125. The PMGDISHA scheme, executed through CSCs, was launched with the primary objective of:
(A) Distributing free high-end smartphones and data packs to all registered rural farmers
(B) Making one person per rural household digitally literate
(C) Constructing high-speed 5G internet telecommunication towers across remote rural regions
(D) Subsidizing and distributing digital television set-top boxes to low-income village families

126. The 'e-Sanjeevani' platform of the Indian government provides which of the following services?
(A) Online booking of train tickets
(B) E-learning for primary school students
(C) Registration of new companies
(D) Telemedicine and remote doctor consultations

127. The DIKSHA portal, an initiative under Digital India, is targeted towards the empowerment of which group?
(A) Farmers
(B) Police Personnel
(C) School Teachers and Students
(D) Healthcare Workers

128. Which Indian government portal offers Massive Open Online Courses (MOOCs) to students and professionals free of cost?
(A) PRAGATI
(B) SWAYAM
(C) NKN
(D) e-NAM

129. The National Digital Library of India (NDLI), a virtual repository of learning resources, was developed by which institution?
(A) IIT Bombay
(B) IIT Delhi
(C) IISc Bangalore
(D) IIT Kharagpur

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130. In Uttar Pradesh, the 'Shasanadesh' portal is used for accessing:
(A) Online FIRs
(B) Income tax return forms
(C) Copies of Government Orders (GOs) and circulars
(D) Voter lists

131. Which government organization is responsible for providing network backbone and e-Governance support to Central and State Governments?
(A) BSNL
(B) NASSCOM
(C) CDAC
(D) NIC (National Informatics Centre)

132. Under the Digital India structure, what role does NeGD (National e-Governance Division) play?
(A) It directly designs and manufactures semiconductor microchips for central government hardware systems
(B) Managing key e-Governance projects and advising ministries technically

65. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Disparities in device access, internet connectivity, and technical skills hinder the effective reach of electronic governance across rural populations. When citizens lack necessary equipment or digital skills to use online portals, public services remain inaccessible, confirming that unequal access directly creates the digital divide that limits administrative outreach nationwide.

66. (A) Unstructured Supplementary Service Data
USSD stands for Unstructured Supplementary Service Data. It is a communications protocol used by GSM cellular telephones to send text messages directly to network service provider servers. In m-governance, USSD enables basic mobile banking, balance inquiries, and financial transactions on feature phones without requiring active mobile internet connections.

67. (D) *
Mobile banking and information queries executed over USSD protocols require users to dial specific service codes on their feature phones. These codes start with an asterisk key, followed by numeric combinations, and terminate with a hash symbol. This dial code initiates session-based communications without needing active internet data plans.

68. (A) Developing multilingual portals supporting regional languages
Addressing language barriers in electronic governance requires building multilingual digital portals and mobile applications that present information in regional languages. Providing content in native languages enables non-English speaking citizens to navigate government platforms comfortably, ensuring inclusive access to public welfare services, administrative schemes, and essential public documentation across diverse linguistic regions.

69. (C) Ability of different IT systems to exchange data seamlessly
Interoperability in electronic governance refers to the technical capacity of disparate information technology systems, databases, and software applications to connect, share information, and communicate seamlessly. Establishing common data standards enables distinct central and state government departments to exchange electronic records efficiently without structural compatibility errors or manual re-entry.

70. (A) National Level → State Level → District Level → Panchayat Level
The administrative hierarchy of electronic governance deployment moves downwards from central national authorities to grassroot governance units. Implementation strategy originates at the national level, cascades to state administrations, extends to district headquarters, and ultimately reaches village panchayat access points, establishing an integrated, multi-tier public service distribution network across the country.

71. (C) Excellence in e-Governance implementation
The National Awards for e-Governance are presented annually by the Department of Administrative Reforms and Public Grievances. These prestigious awards recognize operational excellence, innovation, and successful implementation of digital governance initiatives by public authorities, central ministries, state departments, local bodies, and civic institutions driving citizen-centric service delivery transformation nationwide.

72. (D) Computerization of courts and enabling online case tracking
The e-Courts Mission Mode Project aims to modernize judicial administration across India through comprehensive ICT implementation. It focuses on computerizing district and subordinate courts, digitizing court records, establishing cause list management systems, providing online case status tracking for litigants, and facilitating electronic filing and video-conferencing court proceedings systematically.

73. (A) CNR Number
In the judicial e-Courts portal, litigants and legal professionals track case statuses using a unique sixteen-digit alphanumeric identifier known as the Case Record Number (CNR). Assigned automatically upon initial case filing at any computerized court establishment, this code enables instant nationwide tracking of judicial proceedings, hearing dates, and published orders.

74. (C) Crime and Criminal Tracking Network & Systems
CCTNS stands for Crime and Criminal Tracking Network & Systems. Executed as a national

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ANSWERS

1. (B) The application of Information and Communication Technology (ICT) for delivering government services
Electronic governance involves the integration of information and communication technology to deliver public services efficiently to citizens and businesses. It enhances operational efficiency, transparency, and administrative accountability across government institutions. By replacing traditional manual processes with digital platforms, public service delivery becomes accessible, cost-effective, and streamlined, enabling effective interaction between administrative bodies and citizens.

2. (D) G2C (Government to Citizen)
Government to Citizen interaction focuses on providing public services directly to individual members of the public through electronic channels. Services like online bill payments, license renewals, and certificate applications fall under this category. This model eliminates long queues at administrative offices, simplifies routine transactions, and improves overall accessibility and convenience for general taxpayers and residents.

3. (A) P-2, Q-1, R-4, S-3
Public service platforms categorize e-governance transactions based on participating entities. Citizens obtain personal records like income certificates through citizen-focused models. Commercial entities utilize business portals for tax compliance. Inter-governmental networks facilitate seamless data exchange between financial treasuries, while employee-centric platforms handle internal personnel administration like leave applications for public servants, ensuring smooth governance operations across sectors.

4. (C) G2B
Government to Business models encompass digital services designed to facilitate commercial interactions between public institutions and private companies. Electronic procurement platforms allow businesses to submit competitive bids, monitor tender notices, and execute contracts online. This framework fosters fair commercial competition, reduces administrative overhead, ensures vendor transparency, and speeds up public sector procurement cycles significantly across industries.

5. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Digital service platforms reduce reliance on physical visits and face-to-face interactions with administrative personnel. By automating service workflows and enforcing clear digital audit trails, electronic governance minimizes discretion and systemic rent-seeking behavior. Eliminating direct human interface standardizes service delivery, thereby directly enhancing administrative transparency and significantly mitigating opportunities for corruption in public service distribution mechanisms.

6. (D) G2E
Government to Employee interaction focuses on providing internal digital services to civil servants and public sector workers. Specialized administrative portals enable employees to access payroll information, download official documents, submit leave requests, and manage personal service records. This internal digital infrastructure improves organizational efficiency, streamlines human resource management, and reduces administrative delays within government ministries and departments.

7. (A) 1976
The National Informatics Centre was established in 1976 to drive information technology integration across Indian government administration. Operating under the Ministry of Electronics and Information Technology, it provides crucial digital infrastructure, software development, and network support to central and state government departments, facilitating nationwide implementation of electronic governance systems and modernized public service frameworks.

8. (B) 2006
The National e-Governance Plan was approved by the Union Government in May 2006 to build a comprehensive digital service infrastructure across India. Comprising core infrastructure

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projects, mission mode projects, and support frameworks, this initiative aimed to make all government services accessible to citizens in their localities through integrated delivery platforms and Common Service Centres nationwide.

9. (D) I, II, and III
The core infrastructure framework of the National e-Governance Plan rests on three critical foundational pillars. State Wide Area Networks establish high-speed connectivity across administrative offices, State Data Centres host digital applications and public databases securely, and Common Service Centres serve as physical access points for rural citizens to obtain electronic public services easily and efficiently.

10. (C) A citizen downloading a land record from a state portal
Government to Government interactions involve information exchange and digital workflows operating strictly between administrative departments, state organs, or local authorities. When individual residents access online public portals to view or download land title documents for personal use, the interaction represents a citizen-centric transaction rather than inter-departmental communication, placing it within the Government to Citizen category instead.

11. (C) Free Laptops for All Citizens
The flagship Digital India initiative comprises nine fundamental pillars designed to transform the nation into a digitally empowered society. These pillars focus on building infrastructure, including broadband highways, universal mobile access, public internet programs, e-governance reforms, and digital skilling. Distributing free electronic laptops to every individual citizen is not included as one of these core strategy pillars.

12. (B) Information → Interaction → Transaction → Transformation
Electronic governance maturity typically progresses through four distinct evolutionary phases. Initial stages focus on publishing basic static information online. Subsequently, two-way communication enables interactive query handling. The maturity advances when platforms process complete financial transactions securely. The final stage achieves complete digital transformation, integrating administrative workflows to deliver proactive, automated, citizen-centric public service experiences seamless across departments.

13. (D) Unified Mobile Application for New-age Governance
UMANG stands for Unified Mobile Application for New-age Governance. Launched by the Ministry of Electronics and Information Technology alongside the National e-Governance Division, this platform unifies diverse central, state, and local government services into a single mobile interface, allowing citizens to access multiple public facilities seamlessly using smartphones and electronic handheld devices.

14. (A) I, II, and III only
The unified application serves as a single digital platform offering access to diverse Indian public services in regional languages. Developed by central technology authorities, it integrates various departmental offerings. However, fetching real-time database records, processing applications, and making secure digital payments require an active internet connection, making continuous offline functionality technically infeasible for users.

15. (B) 1 GB
DigiLocker provides users with one gigabyte of free personal cloud storage capacity upon initial account activation. This digital repository enables registered residents to store uploaded electronic files, manage authenticated government certificates, and maintain verified digital credentials securely. The allocation supports efficient personal document management while maintaining systemic system performance across millions of registered Indian citizens nationwide.

16. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Digital documents issued directly into personal cloud repositories by authorized government bodies carry full legal validity under provisions of the Information Technology Act, 2000. Statutory regulations treat these verified electronic records on par with original physical paper documents, ensuring that administrative authorities and institutions accept them for verification without requiring paper copies.

17. (C) Aadhaar Number
Linking a twelve-digit Aadhaar identification number is mandatory for accessing verified

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documents within cloud storage repositories. The unique biometric identifier verifies user identity, ensuring that electronic records, educational marksheets, and official credentials issued by government departments and educational boards are routed accurately and securely to the rightful account owner without identity fraud risks.

18. (B) 1 July 2015
The flagship Digital India program was officially launched on 1 July 2015 by the Prime Minister of India. Designed to transform the country into a digitally empowered knowledge economy, the campaign focuses on expanding digital infrastructure, improving electronic public service delivery, enhancing network connectivity, and fostering digital literacy among citizens across rural and urban areas.

19. (A) P-2, Q-4, R-3, S-1
Modern public service platforms target distinct governance sectors effectively. Vahan automates vehicle registration and transport administration nationwide. Bhoomi manages digitized rural land records and ownership documentation. The e-Sanjeevani platform facilitates remote medical consultations through telemedicine technology, while the PM-KISAN initiative provides direct financial income support to eligible agricultural farmers across the country efficiently.

20. (B) m-Governance
Mobile governance, widely abbreviated as m-governance, refers to utilizing cellular networks, smartphones, and wireless technologies to deliver public information and administrative services to citizens. By leveraging pervasive mobile device adoption, m-governance extends electronic service reach to remote areas, enabling real-time service requests, instant notification alerts, and flexible interaction without requiring traditional desktop internet connectivity.

21. (C) Citizen grievance redressal
The Jansunwai portal in Uttar Pradesh functions as a centralized digital platform dedicated to citizen grievance redressal. It enables residents to register complaints online regarding various state government departments, track the progress of their grievances, and receive transparent timely resolutions, thereby improving administrative responsiveness, accountability, and public satisfaction across governance machinery within the state.

22. (A) e-District portal services
The e-Sathi mobile application was launched by the Uttar Pradesh government to provide easy access to citizen-centric services hosted on the state e-District portal. Mobile users can apply for various official certificates, track application statuses, pay required service fees, and download verified public documents directly on smartphones, ensuring hassle-free administrative interaction from home.

23. (C) III only
State-level e-District portals handle localized administrative service distribution, including the issuance of domicile certificates and income certificates for residents. Passport issuance, however, falls under the exclusive statutory jurisdiction of the Union Ministry of External Affairs through dedicated central Passport Seva Kendra networks rather than state-administered e-District digital service platforms operating within individual states.

24. (D) National e-Governance Plan (NeGP)
The e-District project is executed as a key Mission Mode Project under the National e-Governance Plan across Indian states. It aims to deliver high-volume public services at the district and sub-divisional levels electronically, modernizing backend administrative workflows, improving service turnaround times, and establishing local service centers for convenient public access nationwide.

25. (A) 1076
In Uttar Pradesh, the official toll-free Chief Minister Helpline number is 1076. This dedicated telephonic facility operates continuously, enabling citizens across all districts to register administrative grievances, report public service deficiencies, track ongoing complaint resolutions, and provide direct feedback regarding the execution of various state welfare schemes and government operations.

26. (A) Nivesh Mitra
Nivesh Mitra operates as a single-window portal introduced by the Uttar Pradesh government to facilitate commercial enterprises and industrial investors. The digital platform streamlines entrepreneurship by providing online business registration, processing required departmental clearances, issuing statutory licenses, and monitoring environmental approvals efficiently,

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(C) It serves as a specialized law enforcement agency to prosecute active cyber criminals in high courts
(D) It serves as the statutory market regulator governing retail pricing of mobile phones and tablets in India

133. State Data Centres (SDCs) under the NeGP are established to provide which of the following?
(A) Deploying high-speed free public Wi-Fi hotspot infrastructure across major metropolitan urban cities
(B) Centralized hosting for state e-Governance apps and data
(C) Constructing administrative office complexes and residential quarters for district collectors and magistrates
(D) Operating specialized customer support call centers on behalf of major private telecom operating companies

134. State Wide Area Networks (SWAN) are set up to establish a secure, high-speed communication network connecting the State Headquarters up to the:
(A) International borders
(B) Every individual citizen's home
(C) Private corporate offices
(D) Block headquarters

135. The Open Government Data (OGD) platform (data.gov.in) is meant to:
(A) Publicly expose individual user passwords and sensitive login credentials of registered citizens
(B) Publishing non-sensitive government datasets for public research
(C) Allow individual citizens to store and share personal digital photo albums on secure state servers
(D) Function as an official state-sponsored social media networking platform dedicated to active politicians

136. The 'e-Pramaan' framework offered by the Government of India provides a standard mechanism for:
(A) Secure electronic payment routing and financial settlement across commercial banks
(B) Automated electronic tracking for physical postal deliveries and logistics services
(C) Standardized electronic printing and physical distribution of public official records
(D) Electronic authentication for e-Gov service users

137. Which portal was launched by the UP Government to register complaints specifically regarding illegal occupation of public and private lands?
(A) Anti-Bhu Mafia Portal
(B) UP RERA
(C) Nivesh Mitra
(D) e-Ganna

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138. Which of the following is the most significant advantage of implementing an e-Procurement system in government departments?
(A) It substantially increases the administrative cost of goods and services purchased by government departments
(B) It completely eliminates the requirement for hardware computers or internet connections in government offices
(C) It legally permits government procurement agencies to acquire goods from vendors without making monetary payments
(D) Ensuring transparency and efficiency in public procurement

139. The 'Cyber Swachhta Kendra' initiative by CERT-In helps citizens primarily by:
(A) Providing tools to clean malware and botnets from devices
(B) Offering comprehensive instructional guides on how to completely format local computer hard drives
(C) Operating a government online marketplace for selling discounted commercial antivirus software licences
(D) Distributing complimentary high-speed wireless internet data subscription packs to low-income users

140. Which among the following items correctly reflects one of the nine pillars of the Digital India campaign?
(A) Guaranteeing universal public access to private social media platforms
(B) E-Kranti (Electronic Service Delivery)
(C) Legally mandating a functioning desktop computer unit in every Indian household
(D) Providing completely free electrical power connections to all rural villages nationwide

36. (A) P-2, Q-4, R-1, S-3
State governance portals serve specialized administrative roles. UP Bhulekh digitizes rural land management records for public viewing. The Shasanadesh portal publishes official government orders and executive notifications transparently. The Prerna initiative monitors elementary educational standards and school operational metrics, while the Jansunwai application provides a centralized channel for processing citizen public grievances.

37. (D) Aadhaar enabled Payment System
AePS stands for Aadhaar enabled Payment System. Developed by the National Payments Corporation of India, this financial system allows bank customers to conduct basic monetary transactions, including cash withdrawals, balance inquiries, and fund transfers, at micro-ATMs and service centers using their Aadhaar number and biometric fingerprint authentication seamlessly.

38. (A) Aadhaar number and biometrics
Withdrawing cash using the Aadhaar enabled Payment System at local service centers requires only the customer's twelve-digit Aadhaar number and real-time biometric fingerprint verification. This terminal setup enables financial inclusion for rural and illiterate individuals, removing requirements for debit cards, PIN numbers, smartphone ownership, or active personal email accounts.

39. (C) Tehsildar / SDM
Official caste certificates issued through the Uttar Pradesh e-District online portal are digitally signed by revenue officers such as the Tehsildar or Sub-Divisional Magistrate. These competent local administrative authorities verify the applicant's historical revenue records and caste credentials before applying an authorized digital signature to certify social category status legally.

40. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Biometric deduplication processes prevent duplicate identity enrollments by scanning existing databases prior to issuing identification credentials. Ensuring that each resident holds exactly one unique number eliminates ghost beneficiaries and fraudulent entries, thereby ensuring targeted delivery of welfare benefits and financial subsidies under social welfare schemes without leakages.

41. (B) ₹ 6,000
Under the Pradhan Mantri Kisan Samman Nidhi scheme, eligible small and marginal landholding farmer families receive direct income support totaling six thousand rupees annually. This financial grant is disbursed directly into verified bank accounts in three equal installments of two thousand rupees every four months through automated direct benefit transfer.

42. (D) Weather updates and market prices
The Kisan Suvidha mobile application serves agricultural communities by providing timely information on critical farming parameters. Registered users obtain real-time updates regarding local weather forecasts, prevailing agricultural commodity market prices in nearby mandis, customized crop protection advice, agro-expert recommendations, and localized government agricultural advisories directly on mobile devices.

43. (A) Unified Payments Interface
UPI stands for Unified Payments Interface. Developed by the National Payments Corporation of India, it is a real-time instant payment architecture that powers multiple bank accounts into a single mobile application. It enables seamless instant fund transfers, merchant payments, and online service fee deposits across various public e-governance platforms nationwide.

44. (C) I and III only
Online transparency platforms enable Indian citizens, including Non-Resident Indians holding statutory citizenship, to file information requests under freedom of information laws easily. The integrated web application supports electronic application submissions, digital attachment uploads, and online fee payments using credit cards, debit cards, or internet banking facilities securely and conveniently.

45. (B) 2005
The Right to Information Act was enacted by the Parliament of India in June 2005 and came into full force in October 2005. This landmark legislation empowers citizens to request information from public authorities, promoting administrative transparency, operational accountability, and

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thereby enhancing local economic growth and improving overall ease of doing business.

27. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Online grievance portals enable citizens to submit complaints from home and monitor real-time administrative action using assigned tracking numbers. Eliminating the necessity for physical visits to departmental offices significantly reduces footfall and congestion in public administrative centers, demonstrating how digital service delivery directly resolves logistical challenges while improving public convenience and administrative efficiency.

28. (C) e-District UP Portal
Citizens seeking revenue-related certificates in Uttar Pradesh can utilize the official e-District portal directly. The platform manages online application submission, fee processing, and document verification for essential administrative records such as income, caste, and domicile certificates. Applications are processed electronically by local authorities, allowing users to download digitally signed certificates conveniently.

29. (A) G2B
The Nivesh Mitra platform serves commercial organizations, industrial investors, and private businesses interacting with government regulatory bodies. Designed to streamline industrial licensing, regulatory clearances, and operational approvals, the portal represents a classic Government to Business model. It simplifies commercial workflows, transparently accelerates administrative permissions, and promotes a favorable economic climate for enterprise development.

30. (D) State Wide Area Network
SWAN stands for State Wide Area Network, a fundamental telecom infrastructure component under the National e-Governance Plan. It establishes secure, high-speed telecommunications and data connectivity between state headquarters, district offices, and block-level administrative centers. This robust network backbone facilitates efficient data exchange, inter-departmental communication, and seamless electronic public service delivery state-wide.

31. (B) 12
An Aadhaar card features a unique twelve-digit random identification number assigned to Indian residents. Issued by the national identity authority, this number links an individual's demographic information with unique biometric data, including fingerprints and iris scans, establishing a standardized identity proof used widely for secure authentication across public and private digital services.

32. (B) Unique Identification Authority of India
UIDAI stands for the Unique Identification Authority of India. Established as a statutory body under the Aadhaar Act, 2016, it operates under the Ministry of Electronics and Information Technology. UIDAI is responsible for managing Aadhaar architecture, issuing unique identification numbers, enrolling residents, and maintaining secure biometric authentication databases across the nation.

33. (B) I, III, and IV only
The national biometric identity framework records both demographic information and biometric data using iris and fingerprint scans. The architecture enables instantaneous online identity verification across service networks. However, the issued card serves strictly as evidence of identity and residential verification, and it does not confer legal citizenship status upon the holder under statutory regulations.

34. (B) 3 years
In Uttar Pradesh, an Income Certificate issued via the state e-District portal remains valid for a period of three years from its issuance date. This official record certifies the annual household income of an applicant, serving as mandatory documentation for accessing university admissions, fee concessions, government scholarships, and welfare benefits.

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35. (C) Public Distribution System
The acronym e-PDS stands for Electronic Public Distribution System. It represents the application of information technology to modernize food supply chains and ration distribution networks. Utilizing electronic point-of-sale devices, fair price shop automation, and biometric Aadhaar verification ensures transparent grain allocation, accurate beneficiary identification, and mitigation of leakage in public welfare distribution.

unauthorized interception, eavesdropping, and cyber tampering, ensuring secure communication across public and private telecommunication networks nationwide.

56. (A) To ensure timely delivery of public services to citizens
State Right to Public Services legislation guarantees statutory rights for citizens to receive essential public services within legally mandated timelines. Designated officials face administrative penalties or monetary fines for unjustified delays, ensuring enhanced public official accountability, reduced bureaucratic red tape, and efficient service delivery across municipal and district administrative departments.

57. (C) I, II, and IV only
Local access centers deliver essential public services, utility payment options, digital skilling, and basic banking assistance to rural communities. Operating as private-public entrepreneurship models, these service hubs enhance access to modern electronic infrastructure. Statutory currency issuance, however, remains under the exclusive central authority of the national central bank rather than local digital service points.

58. (D) Village Level Entrepreneur
In the Common Service Centre ecosystem, VLE stands for Village Level Entrepreneur. These local operators manage physical kiosks in rural areas, offering digital public services, certificate applications, utility bill payments, and financial inclusion facilities to village residents while generating self-employment opportunities and improving rural digital connectivity infrastructure.

59. (B) Two-Factor Authentication (2FA)
Two-Factor Authentication enhances cybersecurity by requiring two independent verification credentials before granting access to an account. Usually combining something the user knows, such as a static password, with something the user receives, like a temporary security code sent to a mobile phone, this mechanism significantly reduces identity theft risks on governance portals.

60. (C) Phishing
Phishing is a cyber attack technique where malicious entities impersonate legitimate government agencies or financial institutions through fraudulent emails or messages. The intent is to deceive victims into revealing sensitive personal credentials, passwords, or bank details, enabling unauthorized account access, identity theft, and financial fraud against unsuspecting internet users.

61. (B) The gap between those with access to modern ICT and those without
The term Digital Divide describes the socio-economic gap between individuals who have regular access to modern information and communication technology and those who lack access due to financial, geographical, or educational limitations. Bridging this gap is crucial for ensuring equal participation, digital literacy, and inclusive benefit distribution from electronic governance platforms.

62. (D) Improved transparency and accountability
Enhancing transparency and administrative accountability is a primary advantage of electronic governance initiatives. Digitizing public workflows, establishing automated tracking systems, and publishing official records online minimizes official discretion, reduces bureaucratic delay, mitigates corruption opportunities, and empowers citizens with direct access to government information and public services.

63. (A) I and II only
Implementing electronic service initiatives across rural regions encounters significant structural hurdles, including widespread digital illiteracy and inadequate electrical and telecommunications connectivity. Conversely, widespread English language proficiency is absent in rural areas, making English-only interfaces a major usability barrier rather than a facilitating factor for local populations accessing online services.

64. (B) m-Governance is e-Governance delivered via mobile devices
Mobile governance represents an evolutionary extension of electronic governance that specifically utilizes wireless cellular networks and mobile handheld devices to deliver public services. While traditional electronic governance relies primarily on computer networks and web portals, mobile governance delivers accessible information, SMS alerts, and app-based public services directly to handheld mobile devices anywhere.

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systematic reduction of corruption across central and state government organizations.

46. (B) 30 days
Statutory provisions of the Right to Information Act mandate that a designated Public Information Officer must provide requested information within thirty days of receiving an application. If the requested information concerns the life or liberty of an individual, the officer must furnish the details within forty-eight hours of receipt.

47. (D) Bharat BillPay (BBPS)
Bharat BillPay is an integrated, interoperable bill payment ecosystem conceptualized by the Reserve Bank of India and operated by the National Payments Corporation of India. It enables citizens to pay recurring utility bills, including electricity, water, gas, and telecom services, online through multiple payment channels with standardized security and instantaneous payment confirmation.

48. (A) Electronic National Agriculture Market
The term e-NAM stands for Electronic National Agriculture Market. It is a pan-India electronic trading network that connects existing physical agricultural produce market committee mandis into a unified online market. It facilitates transparent price discovery, encourages competitive online bidding, and supports direct digital payments to agricultural producers across trading markets nationwide.

49. (A) 2, 4, 1, 3
Submitting an online information request follows a clear sequential workflow. The applicant begins by choosing the targeted public authority or government department. Next, the user enters personal details and crafts the specific query text. Then, the application fee is remitted digitally. Finally, submitting the form generates a unique reference number for tracking.

50. (C) Ministry of Agriculture
The PM-KISAN portal and its direct benefit transfer mechanisms are managed nationally by the Ministry of Agriculture and Farmers Welfare. The ministry coordinates with state authorities for beneficiary database validation, land record linkage, and fund disbursements, ensuring financial assistance reaches verified landholding farming households across the country efficiently.

51. (B) A formal declaration of service standards, timelines, and grievance redressal
A Citizen Charter represents a voluntary public commitment made by a government department or organization. It outlines administrative service commitments, expected delivery standards, fixed operational timelines, contact details of public officers, and redressal mechanisms for grievances, serving as an accountability tool to enhance transparency and citizen-centric governance across public service sector institutions.

52. (D) Common Service Centre
CSC stands for Common Service Centre. Operating under the Digital India mission, these physical access points deliver electronic public services, digital financial transactions, healthcare offerings, and educational modules to rural residents. They bridge the digital divide by bringing electronic governance directly to rural areas through local entrepreneurship networks across all states.

53. (C) Village Level Entrepreneurs (VLE)
Common Service Centres are operated by local micro-entrepreneurs known as Village Level Entrepreneurs. These individuals manage daily center operations, maintain computer equipment, assist rural residents in applying for online government certificates, process digital bill payments, and deliver banking and digital literacy services, earning user-service commissions to sustain local service delivery.

54. (A) P-4, Q-3, R-2, S-1
Cybersecurity threats compromise digital governance systems through distinct operational mechanisms. Phishing relies on deceptive electronic communications to harvest secret user credentials. Malware includes disruptive software engineered to compromise computing infrastructure. Distributed Denial of Service floods networks with malicious traffic to disrupt services, while Man-in-the-Middle attacks intercept confidential communications between authentic communicating parties.

55. (C) Encryption
Data encryption scrambles plain text into unreadable ciphertext using cryptographic algorithms during online network transmissions. When citizens submit payment details or personal identity data on government portals, encryption protects sensitive records from

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Mission Mode Project under the Ministry of Home Affairs, it modernizes law enforcement operations by creating a comprehensive, nationwide networked IT infrastructure for tracking crime investigations, criminal records, and intelligence sharing across police departments across India.

75. (D) Police Stations
The primary objective of the Crime and Criminal Tracking Network & Systems project is connecting thousands of police stations across all states and union territories into a unified digital network. Interlinking police station databases enables real-time sharing of criminal investigation data, fingerprint records, stolen vehicle registries, and suspect tracking nationally.

76. (A) I, II, and III only
Judicial web portals and mobile applications provide public access to case progress tracking, cause lists, daily orders, and downloadable judgments. However, structural legal processes, trial proceedings, and sentencing mandates remain strictly within the judicial authority of presiding judges in courtrooms, and capital punishment is never administered via automated digital systems.

77. (C) UP COP
The UP COP mobile application was developed by the Uttar Pradesh Police to provide electronic citizen services directly on mobile devices. Registered residents can report minor property thefts and vehicle thefts by filing e-FIRs online, enabling prompt police reporting without requiring initial physical visits to local police stations.

78. (D) Electronic issuing of traffic fines
An e-Challan is a digital enforcement solution used by traffic police and transport authorities to issue traffic violation notices electronically. Utilizing hand-held devices, automated traffic cameras, and networked database systems, e-Challan records traffic infractions instantly, issuing SMS notifications to vehicle owners and enabling transparent online fine payment options.

79. (A) P-2, Q-1, R-4, S-3
The Information Technology Act, 2000 defines legal remedies and penalties for digital offenses. Section 43 covers civil liabilities for unauthorized computer access and data damage. Section 65 penalizes tampering with computer source code. Section 66 addresses computer-related crimes including hacking, while Section 67 penalizes publishing obscene material electronically.

80. (A) Character certificate verification
The UP COP mobile application offers citizen-centric police services directly through mobile platforms. Users can request background character certificate verifications, seek police clearances for employment or tenant verification, track application statuses, and obtain official digital reports remotely without making physical visits to district police administrative facilities.

81. (B) Through AI Chatbots to answer user queries
Artificial intelligence is increasingly integrated into public portals through automated virtual assistants and conversational AI chatbots. Systems like AskDISHA on rail booking portals assist citizens by addressing routine queries, navigating website tools, explaining application workflows, and providing real-time transactional status updates instantly, improving citizen support services around the clock.

82. (C) Using historical crime data to predict crime hotspots
Predictive policing involves using data analytics, spatial mapping, and machine learning algorithms on historical crime records to identify geographical crime hotspots and emerging criminal patterns. Law enforcement agencies utilize these analytical insights to deploy patrol units strategically, optimize police resource allocation, and proactively prevent potential criminal activity in target zones.

83. (D) Crop yield prediction and pest detection via imagery
Advanced data analytics and artificial intelligence applications in agriculture analyze satellite imagery, localized weather inputs, and drone photography to assist farmers. These systems process environmental parameters to predict crop yields accurately, detect early pest infestations, optimize irrigation scheduling, and provide precision farming recommendations to enhance agricultural productivity and sustainability.

84. (B) Real-time monitoring of flagship schemes and projects
The CM Dashboard - Darpan implemented by the Uttar Pradesh government serves as a

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empowers the authority to issue twelve-digit identity numbers and manage demographic and biometric databases securely nationwide.

104. (A) Blood Type matching
Identity authentication under the national identity framework relies on verified electronic mechanisms, including one-time passwords, fingerprint matching, iris scans, and facial recognition technology. Physical biological traits like blood group testing are not part of digital database verification procedures and cannot be utilized for online Aadhaar authentication operations.

105. (B) Aadhaar Number
The e-Sign service in India offers an integrated digital signature solution based on Aadhaar identity verification. By utilizing one-time passwords or biometric verification linked to an individual's unique Aadhaar number, users can legally sign electronic documents online without needing physical hardware tokens or paper signatures, ensuring legally valid remote authentication.

106. (D) Issued documents fetched from source databases hold parity with physical originals.
In the DigiLocker framework, issued documents fetched directly from issuer databases carry statutory legal recognition equivalent to original physical certificates under the Information Technology Rules. Conversely, user-uploaded self-scanned files serve primarily as digital storage backups and do not automatically carry identical legal status as official issued documents.

107. (B) EPFO (Employees' Provident Fund Organisation)
The UMANG application integrates services from the Employees' Provident Fund Organisation. This integration enables registered workers to review Provident Fund passbook balances, submit pension claim applications, track claim settlement statuses, and update personal details directly on mobile phones without visiting physical district Provident Fund office establishments.

108. (C) e-Mandi (e-NAM integration)
The e-Mandi platform in Uttar Pradesh integrates local agricultural markets with the pan-India electronic national agriculture market architecture. It enables farmers to register crop produce, access real-time price discovery mechanisms, participate in competitive electronic bidding, and sell agricultural yield directly to buyers across regulated state markets transparently and efficiently.

109. (D) Real Estate and Construction
The UP RERA online portal was established under the Real Estate Regulation and Development Act to bring transparency and structural regulation to the real estate sector. It requires real estate developers to register residential projects, protects homebuyer investments, mandates project completion timelines, and provides online grievance redressal for property buyers.

110. (B) Blood Banks
The e-RaktKosh portal is a centralized blood bank management application that integrates blood repositories across the nation. Developed under health governance initiatives, the system tracks real-time blood stock availability, standardizes donor management workflows, streamlines blood bag tracking, and helps citizens locate compatible blood components during medical emergencies nationwide.

111. (A) SSL (Secure Sockets Layer)
The presence of "https://" along with a padlock icon in a browser's address bar indicates that the web session is secured with an SSL or TLS security certificate. This cryptographic protection encrypts communications between the user's web browser and the government server, safeguarding personal credentials and payment transactions from unauthorized eavesdropping.

112. (B) To monitor and control network traffic based on security rules
In governmental communications infrastructure like State Wide Area Networks, a firewall acts as a essential network security boundary. It continuously monitors incoming and outgoing network traffic based on established administrative security rules, blocking unauthorized network access attempts, cyber intrusions, and malicious software attacks from reaching secure internal government servers.

113. (B) Distinguish human users from automated bots
A CAPTCHA test presents distorted characters, numeric sequences, or visual challenges that automated software scripts struggle to interpret.

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and automated payment disbursements between central and state financial institutions directly.

94. (C) G2E
Public sector employees utilizing internal human resource platforms like Manav Sampada to submit leave applications, review service books, or download salary statements engage in Government to Employee transactions. These specialized portals streamline internal human resource operations, enhance administrative efficiency, and reduce manual processing delays within government departments.

95. (B) Aggregating electronic transaction counts of e-Governance projects
The eTaal portal, developed by the National Informatics Centre, operates as a real-time transaction aggregation and analysis platform. It measures the utilization volume of various national and state e-governance applications by capturing electronic transaction counts, providing automated dashboards that reflect the reach and adoption of digital public services nationwide.

96. (A) PRAGATI
PRAGATI stands for Pro-Active Governance and Timely Implementation. Launched in 2015, this multi-modal platform integrates video conferencing, cloud technology, and geospatial mapping. It enables the Prime Minister to review major developmental infrastructure projects and address citizen grievances directly with central ministry secretaries and state chief secretaries in real time.

97. (D) UP Bhulekh
Citizens in Uttar Pradesh seeking computerized land records can access the UP Bhulekh portal. This digitized land management portal provides transparent access to Khatauni details, land ownership status, plot numbers, and agricultural land records online, eliminating manual register searches and helping landowners verify property documentation without visiting local revenue offices.

98. (C) 2014
The MyGov platform was launched by the Government of India in July 2014 to foster active citizen engagement in policy formulation and governance. By providing discussions, tasks, polls, and feedback channels, the portal facilitates participatory governance by connecting residents directly with central ministries and administrative policymaking processes nationwide.

99. (B) Facilitating citizen participation in policy making
The core objective of the MyGov platform is promoting participatory governance by encouraging citizens to share ideas, suggestions, and creative feedback on policy matters. It offers public discussion forums, task assignments, design competitions, and opinion polls, enabling public input to shape central government policy initiatives and national developmental programs.

100. (D) Direct bank account transfer of subsidy amounts to beneficiaries
Direct Benefit Transfer is a governance mechanism designed to transfer welfare subsidies directly into the verified bank accounts of targeted beneficiaries. By leveraging Aadhaar payment bridges and electronic banking networks, this mechanism eliminates intermediary paper vouchers, reduces administrative leakage, prevents duplicate allocations, and ensures financial grants reach eligible recipients promptly.

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101. (B) 10 MB
DigiLocker allows registered account holders to upload personal electronic documents into their dedicated cloud storage area, subject to a maximum file size limit of ten megabytes per file. This restriction ensures optimal database storage management while allowing users to store scanned identity cards, certificates, and personal files securely online.

102. (B) 13
To promote inclusive digital governance, the UMANG mobile application supports thirteen major Indian languages, including English and prominent regional languages. Multi-language support enables diverse populations across different states to access public services, navigate government tools, and complete administrative tasks in their native languages easily on mobile devices.

103. (D) The Aadhaar Act, 2016
The Unique Identification Authority of India was established as a statutory authority under the provisions of the Aadhaar Targeted Delivery of Financial and Other Subsidies, Benefits and Services Act, 2016. The statutory framework

centralized executive monitoring platform. It aggregates key performance indicators and data feeds across various state departments, enabling leadership to track project execution timelines, monitor development scheme outcomes, and assess administrative efficiency in real time transparently.

85. (B) GI Cloud (MeghRaj)
GI Cloud, named MeghRaj, is an initiative by the Government of India designed to optimize ICT infrastructure utilization. It provides centralized cloud computing architecture to host government applications, streamline resource sharing, speed up e-governance deployment, and lower infrastructure costs for central and state government departments across the nation.

86. (D) Mandating that data collected in a country be stored on servers within its borders
Data localization refers to legal mandates requiring that electronic data generated within a specific nation must be stored, processed, and maintained on physical servers located within its territorial boundaries. This regulatory approach enhances national cyber sovereignty, protects citizen data privacy, and ensures law enforcement authorities retain legal jurisdiction over critical digital data.

87. (A) I and II only
Advanced analytical tools help administrative bodies detect tax evasions, verify welfare subsidy distributions, and analyze large operational datasets to formulate evidence-based policy frameworks. However, while predictive analytics enhances law enforcement capabilities, technology alone cannot guarantee an instantly crime-free society, as crime reduction involves multifaceted societal, economic, and legal factors.

88. (A) Large datasets analyzed computationally to reveal patterns
Big Data refers to vast, complex, and rapidly growing datasets generated across various digital platforms, sensors, and administrative transactions. In electronic governance, computing algorithms analyze these massive datasets to uncover hidden patterns, trends, and correlations, helping administrators optimize public transit, improve healthcare delivery, and refine welfare targeting policies.

89. (D) A decentralized, tamper-proof ledger of records
Blockchain technology operates as a decentralized, distributed, cryptographic ledger that maintains immutable records across a network of computers. In electronic governance applications like land registries and academic credential management, blockchain prevents unauthorized record modification, eliminates duplicate entries, builds trust, and ensures tamper-proof verification without relying on central intermediaries.

90. (D) I, II, III, and IV
Uttar Pradesh has deployed several key digital initiatives to modernize governance. UP Bhulekh digitizes land records, Nivesh Mitra simplifies industrial investment clearances, e-Sathi delivers citizen-centric district services on mobile devices, and Prerna monitors basic educational standards, together demonstrating a comprehensive strategy for modernizing administrative operations state-wide.

91. (B) G2C
When an individual citizen books train tickets or checks seat availability on the IRCTC portal, the interaction represents a direct Government to Citizen transaction. The state organ provides public transportation booking services directly to end consumers, offering accessible ticketing, online payment processing, and electronic reservation slips without intermediate private agents.

92. (C) G2B
A commercial enterprise submitting goods and services tax returns through the official GST portal engages in a Government to Business interaction. This digital channel simplifies corporate tax compliance, enables input tax credit claims, automates tax invoicing verifications, and creates transparent reporting workflows between commercial entities and tax regulatory authorities.

93. (C) G2G
Interconnecting a state treasury software platform directly with the Reserve Bank of India e-Kuber financial platform represents a classic Government to Government model. This automated inter-governmental interface facilitates real-time fund flows, seamless financial reconciliations, efficient public debt accounting,

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Used during registration and login procedures on public portals, this challenge-response security mechanism verifies whether the user is an authentic human being, effectively preventing spam submissions and bot attacks.

114. (A) A few minutes (e.g., 5 to 10 minutes)
One Time Passwords generated for digital transaction verification or portal logins feature short operational validity windows, typically ranging between five and ten minutes. This strict time limitation minimizes cybersecurity risks by preventing unauthorized replay attacks and ensuring that temporary access codes expire rapidly after single-use authentication procedures.

115. (D) UPI
The BHIM application is a mobile payment solution developed by the National Payments Corporation of India, built directly upon the Unified Payments Interface architecture. It facilitates simple, instantaneous inter-bank digital fund transfers using virtual payment addresses or scanned QR codes directly from linked bank accounts on mobile devices.

116. (D) IMPS (Immediate Payment Service)
Immediate Payment Service, managed by the National Payments Corporation of India, offers a round-the-clock, instantaneous electronic fund transfer service across participating banks. Accessible via mobile devices, internet banking, and automated teller machines, IMPS enables real-time interbank credit settlements instantly throughout the year, including weekends and public holidays.

117. (D) ₹ 2,00,000
Real Time Gross Settlement is a continuous funds transfer system designed primarily for high-value financial transactions. Administered by the Reserve Bank of India, RTGS processes transactions individually in real time without batching delays, operating with a statutory minimum transaction threshold of two lakh rupees per transfer.

118. (C) National Payments Corporation of India (NPCI)
The RuPay card payment network was developed by the National Payments Corporation of India to establish a domestic, secure, and cost-effective electronic payment system. It supports financial inclusion by powering debit and credit cards across public and private sector banks, reducing reliance on international card schemes for domestic transactions.

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119. (D) A cashless digital payment voucher delivered via SMS or QR code
The e-RUPI initiative represents a person-specific and purpose-specific digital voucher system developed by NPCI. Delivered directly to beneficiaries' mobile devices as an SMS string or QR code, this cashless payment mechanism allows users to redeem welfare subsidies at designated merchant locations without needing bank accounts or credit cards.

120. (A) RFID (Radio Frequency Identification)
FASTag is an electronic toll collection mechanism operating on Radio Frequency Identification technology. Affixed to vehicle windshields, the device communicates with roadside scanners at highway toll plazas, automatically deducting toll fees from linked prepaid or bank accounts, thereby eliminating queues and allowing vehicles to pass through toll booths smoothly.

121. (B) Non-enforceable legally, acting as an accountability tool
Citizen Charters serve as institutional declarations of administrative commitments and operational standards, but they are not legally enforceable documents in courts of law. Instead, they function as administrative accountability tools, establishing transparent delivery benchmarks and guiding grievance redressal procedures without creating enforceable statutory rights or judicial liabilities.

122. (B) District Level
The e-District Mission Mode Project is engineered to automate administrative processes and deliver essential government-to-citizen services primarily at the district level. By modernizing revenue, welfare, and licensing workflows within district and sub-divisional administrative offices, the project enables convenient public service access through integrated local service centers.

123. (C) Every Gram Panchayat
The CSC 2.0 implementation strategy under the Digital India program aims to expand electronic service reach by establishing at least one Common Service Centre in every Gram Panchayat nationwide. This expanded network

brings digital public services, financial inclusion facilities, and administrative utilities directly to rural citizens at the local village level.

124. (A) Pre-litigation legal advice via video conferencing
The Tele-Law initiative connects rural and marginalized citizens with panel lawyers through video conferencing facilities located at Common Service Centres. This service provides accessible pre-litigation legal advice, helping disadvantaged individuals understand statutory rights, resolve disputes early, and seek legal guidance without incurring prohibitive travel expenses or court litigation costs.

125. (B) Making one person per rural household digitally literate
The PMGDISHA scheme aims to bridge the digital divide across rural communities by making six crore rural households digitally literate. Implemented through Common Service Centres, the training program educates one individual per eligible rural family to operate computers, access online services, navigate mobile applications, and perform secure digital transactions independently.

126. (D) Telemedicine and remote doctor consultations
The e-Sanjeevani platform is a national telemedicine service operated by the Ministry of Health and Family Welfare. It enables remote medical consultations by connecting patients and rural health workers directly with qualified medical specialists through video conferencing, providing accessible healthcare guidance, online prescriptions, and diagnostic consultations to citizens nationwide.

127. (C) School Teachers and Students
DIKSHA is a national digital infrastructure platform for school education launched by the Union Ministry of Education. It provides interactive learning materials, digital textbooks, instructional modules, and professional development courses to empower teachers, students, and parents across all states, strengthening overall educational quality through accessible, technology-enabled learning resources nationwide.

128. (B) SWAYAM
SWAYAM is an online educational portal initiated by the Government of India to provide free Massive Open Online Courses to students and lifelong learners. Hosting courses covering school, undergraduate, and postgraduate curricula, the platform provides equitable access to high-quality academic content prepared by premier educational institutions across the country.

129. (D) IIT Kharagpur
The National Digital Library of India is a comprehensive virtual repository of educational resources developed by the Indian Institute of Technology Kharagpur. Sponsored by the Ministry of Education, it aggregates millions of academic texts, research papers, books, and multimedia resources in multiple languages, making learning material globally accessible online.

130. (C) Copies of Government Orders (GOs) and circulars
In Uttar Pradesh, the Shasanadesh portal serves as an official online digital repository for publishing government orders, executive notifications, departmental circulars, and policy guidelines. The platform allows citizens and public officials to search, view, and verify official state administrative orders transparently, promoting operational openness across state departments.

131. (D) NIC (National Informatics Centre)
The National Informatics Centre serves as the premier technology organization responsible for providing network backbone infrastructure, digital platform development, and ICT support to central and state government bodies. Operating under MeitY, NIC plays a crucial role in building national e-governance applications, hosting secure databases, and supporting administrative digital initiatives.

132. (B) Managing key e-Governance projects and advising ministries technically
The National e-Governance Division was created by the Ministry of Electronics and Information Technology to support the execution of the Digital India program. NeGD manages core e-governance infrastructure, provides technical advisory services to central ministries, assists project implementation teams, and coordinates digital capacity-building strategies across government departments nationwide.

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133. (B) Centralized hosting for state e-Governance apps and data
State Data Centres form a core infrastructure component under the National e-Governance Plan. These facilities provide centralized cloud hosting, secure database management, high-capacity computing storage, and disaster recovery infrastructure for hosting state e-governance applications, ensuring reliable digital public service delivery and secure data management across states.

134. (D) Block headquarters
State Wide Area Networks establish high-speed, secure telecommunications connectivity connecting state headquarters down through district administrative centers to block-level headquarters. This dedicated closed-user network infrastructure ensures seamless inter-departmental data transmission, voice communications, and reliable digital public service delivery across all administrative sub-divisions within the state.

135. (B) Publishing non-sensitive government datasets for public research
The Open Government Data platform (data.gov.in) supports transparent governance by publishing non-sensitive operational datasets generated by government bodies. It provides open access to statistical, spatial, and developmental datasets in machine-readable formats, encouraging academic research, policy analysis, mobile application development, and public innovation while protecting individual citizen privacy.

136. (D) Electronic authentication for e-Gov service users
The e-Pramaan framework provides a standardized e-authentication architecture developed by the Ministry of Electronics and Information Technology. It enables secure user identity verification across various e-governance portals using multi-factor mechanisms, including passwords, OTPs, and Aadhaar-based biometrics, ensuring safe access to public digital service platforms across the nation.

137. (A) Anti-Bhu Mafia Portal
The Anti-Bhu Mafia Portal was launched by the Uttar Pradesh government to address land grabbing and illegal encroachments on public and private land. The portal allows citizens to register complaints online regarding land encroachers, enabling local administrative and police authorities to track grievances, initiate investigations, and reclaim occupied properties.

138. (D) Ensuring transparency and efficiency in public procurement
Implementing e-procurement platforms modernizes government purchasing by publishing tender requirements online, receiving electronic bids, and recording evaluation decisions transparently. Automating procurement workflows minimizes corrupt practices, eliminates physical tender tampering, encourages competitive vendor participation, speeds up transaction processing times, and ensures public fund utilization accountability across government departments.

139. (A) Providing tools to clean malware and botnets from devices
The Cyber Swachhta Kendra is a Botnet Cleaning and Malware Analysis Centre operated by CERT-In under the Ministry of Electronics and Information Technology. It assists citizens and organizations by detecting malware threats, providing free security tools to remove botnet infections from personal computing devices, and enhancing overall national cybersecurity awareness.

140. (B) E-Kranti (Electronic Service Delivery)
E-Kranti represents a key core pillar of the Digital India campaign, focusing on the electronic delivery of public services. It aims to transform public administration by redesigning government processes, integrating advanced technologies, automating service workflows, and ensuring accessible, transparent, and efficient delivery of education, healthcare, financial, and agricultural services nationwide.

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CHAPTER 15
Digital Financial Tools and Applications

1. Which of the following best defines the primary objective of digital financial services?
(A) To deliver financial services electronically to unbanked populations
(B) To replace all physical bank branches with automated teller machines
(C) To restrict transactions exclusively to individuals owning credit cards
(D) To eliminate the use of local currency units in international commerce

2. What is the full form of NPCI in the context of the Indian digital payment system?
(A) National Payment Council of India
(B) Network Payment Company of India
(C) National Payments Corporation of India
(D) Nodal Processing Centre of India

3. Consider the following statements regarding digital payment systems.
Statement I: Net banking requires an internet connection and a web browser to access banking services.
Statement II: Mobile banking can only be accessed by downloading the specific mobile application of a bank.
(A) Both Statement I and Statement II are correct
(B) Both Statement I and Statement II are incorrect
(C) Statement I is correct but Statement II is incorrect
(D) Statement I is incorrect but Statement II is correct

4. Which of the following was one of the earliest forms of electronic funds transfer introduced for general public use before the era of smartphones?
(A) Unified Payments Interface
(B) Aadhaar Enabled Payment System
(C) Quick Response (QR) Code payment
(D) Electronic Clearing Service (ECS)

5. Identify the odd one out among the following digital payment applications.
(A) Google Pay
(B) MS Excel
(C) PhonePe
(D) Paytm

6. A customer wants to transfer money using a virtual payment address (VPA) without sharing bank account details. Which system should the customer use?
(A) RTGS
(B) NEFT
(C) UPI
(D) Cheque clearing

7. Which of the following is not a mandatory requirement for using the Unified Payments Interface (UPI)?
(A) A bank account
(B) A smartphone or a feature phone with network connectivity
(C) A registered mobile number linked to the bank account
(D) A physical credit card

8. Which organisation is primarily responsible for developing and managing the UPI platform in India?
(A) National Payments Corporation of India
(B) State Bank of India
(C) Ministry of Finance
(D) Telecom Regulatory Authority of India

9. Consider the following statements about UPI apps (Google Pay, PhonePe, Paytm):
I. They all run on the same underlying UPI infrastructure.
II. They require a UPI PIN to authorise any debit transaction.
III. They allow users to link multiple bank accounts to a single app.
Which of the given statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

10. What is the primary difference between a debit card and a credit card?

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(A) A debit card functions only at automated teller machines, whereas a credit card is used exclusively for online shopping payments.
(B) A debit card deducts money directly from a bank account, whereas a credit card borrows funds up to a preset credit limit.
(C) A debit card always requires a personal identification number, whereas a credit card never requires any PIN for transactions.
(D) A debit card charges interest on every purchase transaction, whereas a credit card usage remains entirely free of interest.

11. What function does the CVV number serve in card payments?
(A) It acts as an additional security feature for online or card-not-present transactions.
(B) It determines the maximum credit limit assigned to the primary holder of the card.
(C) It eliminates the requirement for receiving an OTP during international transactions.
(D) It indicates the specific branch code of the issuing bank for card identification.

12. Match the following UPI-enabled apps in List I with their parent or associated technology companies in List II.
List I: UPI Apps
P. Google Pay
Q. Paytm
R. PhonePe
S. BHIM
List II: Companies
1. One97 Communications
2. Alphabet Inc.
3. NPCI
4. Walmart / Flipkart Group
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-4, R-1, S-3
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-1, R-4, S-2

13. Which of the following statements about Point of Sale (POS) machines is incorrect?
(A) They are used by merchants to accept payments via debit and credit cards.
(B) They can read information from a card's magnetic stripe or EMV chip.
(C) They generate paper or digital receipts for successful transactions.
(D) They can process transactions without any network or telephone connection.

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14. What is the fundamental difference between an open digital wallet and a closed digital wallet?
(A) An open wallet strictly requires an active internet connection, whereas a closed wallet operates completely offline without network.
(B) An open wallet is provided entirely free of cost, whereas a closed wallet requires a mandatory monthly subscription fee from users.
(C) An open wallet permits cash withdrawals at ATMs, whereas a closed wallet restricts usage to purchases from a specific merchant.
(D) An open wallet is designed to store cryptocurrency assets, whereas a closed wallet holds standard sovereign fiat currency only.

15. In a typical digital wallet scenario, what happens when a user adds money to the wallet?
(A) The deposited money becomes permanently locked inside the system and cannot be spent on future merchant transactions.
(B) The wallet balance increases, drawing funds directly from a linked bank account, debit card, or credit card instrument.
(C) The user's underlying bank account receives regular interest payouts directly from the third-party wallet service provider.
(D) The transferred money is immediately swept into a centralized government foreign exchange reserve held by the central bank.

16. Which of the following is an example of a semi-closed digital wallet in India?
(A) A metro smart card
(B) A specific retailer's gift card
(C) An SBI physical debit card
(D) Paytm Wallet

17. Consider the following statements regarding the Aadhaar Enabled Payment System (AEPS).
Statement I: AEPS requires the customer to remember a complex alphanumeric password to withdraw cash.
Statement II: AEPS transactions are authenticated using the customer's biometric data.
(A) Both Statement I and Statement II are correct
(B) Both Statement I and Statement II are incorrect
(C) Statement I is correct but Statement II is incorrect
(D) Statement I is incorrect but Statement II is

correct

18. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): OTPs (One Time Passwords) are widely used as a second layer of security in digital transactions.
Reason (R): OTPs remain valid indefinitely until the user enters them, ensuring the transaction is never cancelled.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

19. If a merchant in a rural village wishes to offer cash withdrawal services using a MicroATM, which system is most suitable for this purpose?
(A) AEPS
(B) RTGS
(C) Cheque Truncation System
(D) Internet Banking

20. Which of the following is not a service typically offered under AEPS?
(A) Initiating cash withdrawals at designated micro-ATM centers
(B) Performing balance enquiries on linked savings bank accounts
(C) Executing direct Aadhaar to Aadhaar fund transfers seamlessly
(D) Opening a demat account for secondary market stock trading

21. What is the full form of RTGS?
(A) Rapid Transfer General System
(B) Real Time Gross Settlement
(C) Real Time General Settlement
(D) Regular Transfer Gross System

22. Which electronic fund transfer method processes transactions in half-hourly batches rather than continuously in real-time?
(A) IMPS
(B) RTGS
(C) NEFT
(D) UPI

23. Identify the incorrect statement regarding IMPS (Immediate Payment Service).
(A) It is continuously operational 24x7 throughout the year, including weekends.
(B) It settles transaction funds instantly into the designated beneficiary's account.
(C) It can be accessed conveniently via mobile banking, net banking, and ATM channels.
(D) It can only be initiated in person from a bank branch during working hours.

24. What is the minimum transaction amount required to use the RTGS system in India?
(A) Rs. 50,000
(B) Rs. 1,00,000
(C) Rs. 2,00,000
(D) There is no minimum limit for RTGS

25. Consider the following statements about the BHIM application:
I. It was developed by the National Payments Corporation of India.
II. It supports multiple regional languages of India.
III. It requires an active internet connection to make transactions via the app.
IV. It only works if both the sender and receiver use the BHIM app specifically.
Which combination of the above statements is incorrect?
(A) I and II
(B) III only
(C) IV only
(D) I, II, and III

26. Which of the following best describes the function of a QR code in digital payments?
(A) It securely encrypts the user's secret password and account credentials for local offline storage.
(B) It stores merchant details or a payment link that can be scanned by a smartphone camera.
(C) It provides a physical printed paper receipt generated directly from a POS terminal machine.
(D) It serves as a digital functional replacement for the EMV microchip on a physical debit card.

27. What does the term 'interoperability' mean in the context of QR-code payments?
(A) A QR code generated by one UPI app can be scanned and paid using any other UPI app.
(B) A QR code can strictly be scanned and read by specialized proprietary banking hardware.
(C) A QR code automatically deducts payment funds from any smartphone brought into

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close proximity.
(D) A QR code dynamically alters its structural shape depending on the precise transaction amount.

28. Which Indian government app was specifically launched to promote digital payments based on the Unified Payments Interface?
(A) UMANG
(B) DigiLocker
(C) BHIM
(D) e-NAM

29. A user attempts to make a digital transaction but receives an SMS containing a numeric code that expires in 5 minutes. What is this code called?
(A) IFSC code
(B) MICR code
(C) Swift code
(D) OTP

30. Why is sharing an OTP considered a high-risk behaviour in digital banking?
(A) Because it instantly incurs a steep monetary penalty fee charged directly by the issuing bank.
(B) Because it leads to the permanent disabling and deactivation of the user's primary mobile number.
(C) Because it allows unauthorized persons to complete a transaction on the user's behalf.
(D) Because it automatically deletes and uninstalls the mobile banking application from the phone.

31. Select the correct sequence that represents the evolution of exchange systems from the oldest to the most modern.
(A) Digital Wallets → Paper Money → Barter System → Coins → Plastic Cards
(B) Barter System → Coins → Paper Money → Plastic Cards → Digital Wallets
(C) Coins → Barter System → Plastic Cards → Digital Wallets → Paper Money
(D) Barter System → Paper Money → Digital Wallets → Coins → Plastic Cards

32. Which Government of India initiative is primarily aimed at ensuring every household has access to banking facilities and digital financial services?
(A) Make in India
(B) Swachh Bharat Abhiyan
(C) Ayushman Bharat
(D) Pradhan Mantri Jan Dhan Yojana (PMJDY)

33. How does the PMJDY scheme directly support digital payments for its account holders?
(A) By issuing RuPay debit cards to the account holders
(B) By providing free smartphones to all account holders
(C) By offering a permanent waiver on all income taxes
(D) By providing a pre-loaded digital wallet with international currency

34. What is the full form of KYC in the banking sector?
(A) Keep Your Cash
(B) Know Your Currency
(C) Know Your Customer
(D) Keep Your Credit

35. Which process allows banks to digitally verify the identity of a customer without requiring physical paper documents?
(A) e-KYC
(B) e-Rupi
(C) NEFT
(D) IMPS

36. Which database is primarily queried to authenticate a customer during the e-KYC process in India?
(A) PAN database
(B) Voter ID database
(C) Driving Licence database
(D) Aadhaar (UIDAI) database

37. Which of the following is not a component of a strong security practice for digital banking?
(A) Frequently changing net banking passwords
(B) Using the same password for all financial apps
(C) Enabling mandatory two-factor authentication
(D) Keeping the secret UPI PIN strictly private

38. Consider the following statements regarding digital signatures:
I. A digital signature is a scanned copy of a physical signature on a computer.
II. A digital signature ensures the authenticity and integrity of an electronic document.
III. Digital signatures use cryptographic techniques to secure the document.
Which of the given statements is/are correct?
(A) I and II only

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58. Which of the following is not considered a safe practice while executing an online financial transaction?
(A) Verifying that the official website URL begins securely with 'https'
(B) Using an unencrypted public Wi-Fi network to enter net banking credentials
(C) Logging out of the active internet banking portal session immediately after use
(D) Keeping the computer system's antivirus software updated on a regular basis

59. What is a 'Digital Wallet' essentially?
(A) A software app that securely stores payment details for various payment methods.
(B) A physical leather wallet equipped with an embedded microchip for tap payments.
(C) A centralized government repository where national digital currency is created.
(D) An offline physical ledger register book maintained locally by a retail store.

60. Consider the following statements regarding the spread of digital financial services in rural areas:
I. Common Service Centres (CSCs) play a crucial role in delivering digital financial services to rural citizens.
II. Poor internet connectivity is one of the major barriers to rural digital banking.
III. AEPS has made it easier for rural people to withdraw subsidies.
IV. Digital financial services have completely eliminated the use of physical cash in Indian villages.
Which combination of statements is correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II, III, and IV only
(D) I, II, III, and IV

61. A user wants to pay electricity bills using a feature phone without an internet connection. Which digital payment service can they utilise?
(A) RTGS transaction web portal
(B) Google Pay mobile app service
(C) IMPS net banking portal system
(D) USSD based *99# cellular service

62. Which of the following is an example of Direct Benefit Transfer (DBT) facilitated by digital banking?
(A) A retail merchant receiving payment from a customer via a scanned QR code
(B) A university student transferring semester tuition college fees online
(C) A farmer receiving PM-KISAN subsidy directly into their bank account
(D) A salaried employee withdrawing emergency cash funds from a local ATM

63. What distinguishes an e-wallet from a traditional bank account?
(A) E-wallets are strictly restricted to holding non-convertible foreign currency reserves.
(B) E-wallets facilitate quick micro-transactions without full traditional bank account features.
(C) E-wallets operate completely outside regulatory frameworks without requiring customer KYC.
(D) E-wallets exist exclusively as physical hardware tokens issued by the central monetary authority.

64. Identify the correct pair among the following.
(A) NEFT - Real-time settlement for high-value transactions only
(B) Debit Card - Borrows money from the bank for purchases
(C) Phishing - Stealing an ATM machine
(D) UPI - Funds transfer using a Virtual Payment Address

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65. Which of the following platforms is primarily used to digitally store and verify documents and certificates in India?
(A) DigiLocker
(B) BHIM
(C) UMANG
(D) Paytm

66. Arrange the following steps in the correct order to successfully make a payment using a UPI QR code at a shop:
I. Enter the payment amount.
II. Open the UPI app and select 'Scan QR'.
III. Enter the UPI PIN.
IV. Point the phone camera at the merchant's QR code.
(A) II, IV, I, III
(B) I, II, III, IV
(C) II, I, IV, III
(D) IV, II, I, III

67. Which of the following digits represents a typical UPI PIN length chosen by banks in India?
(A) 2 or 3 digits
(B) 4 or 6 digits

(D) Statement I is incorrect but Statement II is correct

49. In the context of digital currencies, what is cryptocurrency primarily based on?
(A) Decentralised ledger technology such as blockchain
(B) Physical gold reserves stored in bank vaults
(C) The printing of fiat currency by the central bank
(D) Barter exchange agreements between nations

50. Which of the following is a key characteristic of traditional cryptocurrencies like Bitcoin?
(A) They are issued and fully backed by the Reserve Bank of India.
(B) They exist as physical polymer notes in the market.
(C) They operate on a decentralised peer-to-peer network.
(D) They require a mandatory minimum balance of physical cash to operate.

51. What role does the Reserve Bank of India (RBI) play in the digital payment ecosystem of India?
(A) It acts as the primary regulator and formulates overall policies for payment systems.
(B) It directly manufactures and distributes POS hardware machines to retail merchants.
(C) It provides free modern smartphones to rural populations to increase UPI adoption.
(D) It actively manages individual Google Pay accounts for all registered citizens.

52. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The penetration of mobile networks and smartphones has significantly accelerated digital financial inclusion in rural areas.
Reason (R): Mobile banking allows rural citizens to access banking services without travelling long distances to a physical bank branch.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

53. Which technology underpins the Central Bank Digital Currency (CBDC) proposed or introduced by many central banks, including the RBI's digital rupee?
(A) Legacy magnetic stripe card verification technology
(B) Distributed Ledger Technology or blockchain principles
(C) Optical Mark Recognition and document scanning systems
(D) Centralized cloud-based digital document storage

54. What does the term 'Financial Inclusion' primarily mean in the context of digital banking?
(A) Restricting advanced banking services exclusively to high-net-worth institutional investors.
(B) Converting all domestic savings accounts directly into foreign currency holding accounts.
(C) Ensuring access to useful and affordable financial products and services for all individuals.
(D) Mandating that every citizen must actively invest a portion of income in the stock market.

55. If someone requests money from you via a UPI app, what action is required from your end to approve the transfer?
(A) Opening the payment notification message
(B) Entering the receiver's personal phone number
(C) Sending a confirmation SMS to your mobile operator
(D) Entering your UPI PIN to authorise the deduction

56. Which of the following best describes 'Vishing'?
(A) Using voice calls to trick individuals into revealing sensitive financial info
(B) Sending deceptive text messages containing malicious web links to mobile users
(C) Gaining unauthorized remote access to a central banking institution's main server
(D) Creating a fraudulent website that visually clones a legitimate online bank portal

57. What is the full form of VPA in the context of UPI payments?
(A) Verified Payment Account
(B) Virtual Payment Address
(C) Visual Process Application
(D) Validated Payment Access

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(B) II and III only
(C) I and III only
(D) I, II and III

39. Identify the term used for a cyber attack where criminals send fraudulent emails or messages appearing to be from a legitimate bank to steal login credentials.
(A) Skimming
(B) Spamming
(C) Hacking
(D) Phishing

40. A fraudster installs a hidden card reader on an ATM slot to copy the magnetic stripe data from customers' debit cards. This activity is known as:
(A) Skimming
(B) Spoofing
(C) Smishing
(D) Vishing

41. What is the full form of IMPS?
(A) Instant Money Payment System
(B) Immediate Payment Service
(C) Internal Money Processing System
(D) International Money Payment Service

42. What is the full form of POS in card payment systems?
(A) Point of Service
(B) Point of Sale
(C) Payment of System
(D) Process of Sale

43. What is the full form of AEPS?
(A) Aadhaar Enabled Payment System
(B) Automatic Electronic Payment System
(C) Account Encrypted Processing System
(D) Aadhaar Electronic Processing System

44. Which of the following represents a situation where a digital wallet would be most useful?
(A) Purchasing a high-value real estate property worth Rs. 50 Lakhs through bank transfer
(B) Transferring foreign currency funds directly to a commercial European bank account
(C) Paying a Rs. 50 auto fare quickly without entering sensitive bank account details
(D) Issuing corporate monthly salary disbursements to a workforce of 500 employees

45. Match the following fund transfer mechanisms in List I with their key characteristics in List II.
List I: Mechanism
P. RTGS
Q. NEFT
R. IMPS
S. UPI
List II: Characteristic
1. Minimum limit is Rs. 2 Lakh
2. Settles in half-hourly batches
3. Facilitated through a Virtual Payment Address (VPA)
4. 24x7 instant fund transfer using account number and IFSC
(A) P-2, Q-1, R-3, S-4
(B) P-1, Q-3, R-4, S-2
(C) P-4, Q-2, R-1, S-3
(D) P-1, Q-2, R-4, S-3

46. If a customer observes an unauthorized digital transaction on their bank account, what is the most immediate action they should take?
(A) Permanently delete and uninstall the mobile banking app from their phone
(B) Wait for the arrival of the next monthly bank statement to confirm charges
(C) Block the card or account by contacting the bank's support immediately
(D) Write a formal written complaint letter to the Reserve Bank of India

47. Which authority serves as an alternative dispute resolution mechanism established by the RBI for resolving customer complaints regarding digital transactions?
(A) National Consumer Disputes Redressal Commission
(B) Banking Ombudsman
(C) Supreme Court of India
(D) Securities and Exchange Board of India (SEBI)

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48. Consider the following statements about digital financial literacy.
Statement I: Digital financial literacy involves understanding how to use electronic payment systems safely and efficiently.
Statement II: Digital financial literacy is only relevant for software engineers and bank employees.
(A) Both Statement I and Statement II are correct
(B) Both Statement I and Statement II are incorrect
(C) Statement I is correct but Statement II is incorrect

(C) 8 or 10 digits
(D) 12 digits

68. The RBI has introduced the concept of 'Tokenisation' for card payments. What is its primary purpose?
(A) To convert digital money back into physical currency coins for cash storage
(B) To charge an additional government service tax on all credit card purchases
(C) To allow an unlimited overdraft credit limit on existing retail debit cards
(D) To replace actual card details with an alternate code to improve payment security

69. Which of the following is a typical symptom of a compromised digital bank account?
(A) Receiving routine promotional communication emails from the bank
(B) Unexplained account debits or alerts for purchases not made by the user
(C) Receiving a notification that the mobile banking application needs an update
(D) Observing an ATM machine dispensing crisp, uncirculated new currency notes

70. How many digits are present in an Aadhaar number, which is heavily used in India's digital financial inclusion schemes?
(A) 10
(B) 12
(C) 14
(D) 16

71. What is the full form of CVV found on the back of a debit or credit card?
(A) Cash Verification Value
(B) Customer Validation Value
(C) Card Validation Version
(D) Card Verification Value

72. Which of the following is not true about the BHIM application?
(A) It charges a flat Rs. 100 fee for every transaction.
(B) It requires a smartphone to operate fully.
(C) It allows users to send money using a mobile number or VPA.
(D) It stands for Bharat Interface for Money.

73. If a merchant's POS machine says 'Transaction Declined' but the amount is deducted from the customer's account, what typically happens next?
(A) The customer must permanently forfeit the debited transaction funds without remedy.
(B) The funds are automatically reversed to the customer's account within a set time frame.
(C) The merchant receives double the intended transaction amount at a later date automatically.
(D) The customer's primary bank account is permanently blocked and frozen across all branches.

74. Which of the following best defines 'Smishing'?
(A) Fraudulent emails sent to deceive users into sharing sensitive personal data.
(B) SMS messages used to trick users into revealing sensitive data or downloading malware.
(C) Physically breaking into an automated teller machine using specialized industrial tools.
(D) Duplicating a user's mobile SIM card directly at an authorized telecom service provider office.

75. Consider the following statements about the RTGS system:
I. It is primarily meant for large value transactions.
II. The settlement of funds happens continuously on an order-by-order basis.
III. It is governed and maintained by the Reserve Bank of India.
Which of the statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

76. In an e-KYC process, what replaces the submission of physical photocopies of identity proofs?
(A) Completing a verbal identity confirmation during an unrecorded telephone customer call.
(B) Submitting a handwritten character verification letter signed by a local public official.
(C) Digital authentication using Aadhaar and biometric/OTP verification procedures.
(D) Capturing a simple self-attested portrait photograph using a standard web browser camera.

77. Which feature of internet banking allows a user to automate the payment of recurring utility bills?

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(A) I, II, and III only
(B) I, III, and IV only
(C) II, III, and IV only
(D) I, II, III, and IV

97. Which entity acts as a central switch for interoperable digital transactions like UPI, IMPS, and AEPS in India?
(A) NPCI
(B) BSNL
(C) State Bank of India
(D) NITI Aayog

98. How is the digital rupee (e₹) different from UPI?
(A) e₹ is an application software interface, whereas UPI represents a physical currency token issued by commercial banks.
(B) e₹ requires a mandatory credit card facility to function, whereas UPI operates directly without any credit association.
(C) e₹ is sovereign digital fiat currency, whereas UPI is a payment interface used for moving money between bank accounts.
(D) e₹ is a decentralised open cryptocurrency, whereas UPI represents a government utility token managed by central authorities.

99. Which of the following serves as the 'username' in the UPI payment ecosystem?
(A) Virtual Payment Address (VPA)
(B) Bank Account Number details
(C) Branch IFSC Identification Code
(D) Card CVV Security Verification Code

100. Identify the correct statement regarding digital financial tools.
(A) Net banking does not require an internet connection.
(B) Digital signatures have no legal validity in India.
(C) OTPs are permanent passwords that can be reused indefinitely.
(D) A smartphone is essential for QR code-based payments.

101. Which of the following best defines a 'MicroATM'?
(A) A physical mini-branch office operated directly by bank staff with ten permanent employees.
(B) A handheld POS device used by business correspondents to provide basic banking services.
(C) A specially manufactured miniature credit card designed for contactless low-value payments.
(D) An internal software feature built directly into mobile payment applications like Google Pay.

102. Select the correct order of data flow when a customer initiates an IMPS transaction from a mobile banking app.
(A) Customer App → Sender Bank → NPCI Switch → Receiver Bank → Beneficiary Account
(B) Customer App → NPCI Switch → Sender Bank → Beneficiary Account → Receiver Bank
(C) Customer App → Receiver Bank → Sender Bank → NPCI Switch → Beneficiary Account
(D) Customer App → Beneficiary Account → Receiver Bank → NPCI Switch → Sender Bank

103. Which protocol ensures secure communication over a computer network, widely used on the internet for net banking?
(A) HTTP
(B) FTP
(C) SMTP
(D) HTTPS

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104. In the context of banking ombudsman, what is the maximum fee charged to a customer for filing a complaint regarding a failed digital transaction?
(A) Rs. 100
(B) Rs. 500
(C) 1% of the transaction amount
(D) No fee is charged

105. What is the full form of USSD in the context of mobile banking without internet?
(A) Universal Standard Service Data
(B) Unstructured Supplementary Service Data
(C) Unified System Service Data
(D) User Secured Service Dialling

106. Which of the following platforms provides a unified USSD interface accessible by dialing *99#?
(A) RTGS
(B) BHIM / UPI
(C) DigiLocker
(D) ECS

87. A digital signature provides which of the following security features to an electronic document?
(A) Translating electronic documents into multiple regional languages automatically
(B) Significantly compressing the physical storage file size of the digital document
(C) Automatically printing a physical certified paper copy of the electronic file
(D) Ensuring non-repudiation and structural integrity of the electronic document

88. Which cryptographic technique is used in the creation of a standard digital signature?
(A) Asymmetric cryptography utilizing public and private key pairs
(B) Symmetric cryptography utilizing a single shared secret encryption key
(C) Caesar cipher substitution algorithm for basic character encryption
(D) Steganography techniques for hiding data within digital image files

89. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Credit cards generally offer an interest-free grace period for purchases if the total bill is paid by the due date.
Reason (R): Credit cards draw funds directly from the user's savings account at the moment of purchase.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

90. Which of the following cards requires a bank account to have pre-existing funds to make a successful transaction?
(A) Credit Card
(B) Debit Card
(C) Charge Card
(D) Forex Card (before loading)

91. In digital banking, what does the 'lock' icon displayed in the address bar of a web browser indicate?
(A) The website connection is encrypted and securely authenticated
(B) The user's online bank account has been locked due to security
(C) The user has entered an incorrect password multiple times today
(D) The banking web portal is undergoing scheduled server maintenance

92. Which mobile application provides a unified platform to access various Indian government services, including provident fund, tax, and utility payments?
(A) BHIM
(B) IRCTC
(C) UMANG
(D) MyGov

93. What is a primary disadvantage of a closed digital wallet?
(A) It can only be operated using a traditional desktop computer interface
(B) It imposes a recurring hourly account maintenance fee on active balances
(C) It requires customers to deposit physical precious metals as collateral
(D) It does not permit users to transfer wallet funds back to bank accounts

94. If a user uses the Internet banking portal to transfer Rs. 10,000 to a friend on a Sunday night, which transfer method will ensure instant credit?
(A) NEFT
(B) Cheque Deposit
(C) IMPS
(D) RTGS

95. What does the term 'Phishing' refer to in the context of digital financial security?
(A) A marketing strategy implemented by retail banks to attract new account holders
(B) A cyber attack aimed at deceiving individuals into providing sensitive information
(C) A software utility designed to automatically archive older customer banking files
(D) A network optimization technique used to boost internet speeds during transactions

96. Consider the following statements about the Pradhan Mantri Jan Dhan Yojana (PMJDY):
I. It is a National Mission for Financial Inclusion.
II. PMJDY accounts can be opened with zero balance.
III. It provides a RuPay debit card to the account holders.
IV. It is available exclusively to residents of urban areas.
Which combination of statements is correct?

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(A) Receiving a dynamic One Time Password
(B) Temporarily locking or blocking a card
(C) Downloading monthly account statements
(D) Setting Standing Instructions or AutoPay

78. What does 'Contactless Payment' via a debit/credit card primarily rely on?
(A) Standard legacy magnetic stripe technology embedded on payment cards
(B) Short-range Bluetooth wireless pairing with the merchant POS terminal
(C) Near Field Communication or Radio Frequency Identification technology
(D) Direct wireless connection of the physical card to a local Wi-Fi network

79. A user creates a VPA like 'user@sbi'. What does the 'sbi' part of this address denote?
(A) The secret personal access password chosen by the user
(B) The PSP or bank handle providing the underlying UPI service
(C) The specific brand model of mobile phone used by the customer
(D) The physical geographic location or postal address of the user

80. Which scheme was launched by the Government of India to provide financial assistance to street vendors using digital payment incentives?
(A) PM KISAN
(B) Atal Pension Yojana
(C) Sukanya Samriddhi Yojana
(D) PM SVANidhi

81. What is the primary purpose of a firewall in a digital banking server?
(A) Protecting the internal network from unauthorized access and cyber-attacks
(B) Cooling down server hardware components to prevent operational overheating
(C) Generating dynamic one-time authentication codes for user login sessions
(D) Printing physical paper account statements for official branch distribution

82. Match the digital banking terminology in List I with its description in List II.
List I: Terminology
P. IFSC
Q. MICR
R. UPI PIN
S. OTP
List II: Description
1. A 4 or 6 digit passcode used to authorise UPI transactions
2. An alphanumeric code that identifies a specific bank branch
3. A dynamic password valid for a single transaction
4. A 9-digit code printed on cheques to facilitate faster clearing
(A) P-4, Q-2, R-3, S-1
(B) P-2, Q-1, R-4, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-4, R-1, S-2

83. Which of the following actions is a safe practice to prevent online financial fraud?
(A) Periodically reviewing bank statements for unauthorized debit transactions
(B) Writing the confidential ATM PIN directly onto the back of the debit card
(C) Clicking on web links in unverified emails prompting for immediate KYC updates
(D) Sharing mobile banking credentials with close friends for personal convenience

84. Which biometric data is commonly used for authentication in the Aadhaar Enabled Payment System (AEPS)?
(A) Voice recognition and DNA
(B) Facial recognition and weight
(C) Handwriting analysis
(D) Fingerprint and Iris scan

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85. What is the maximum liability of a customer in case they report an unauthorised electronic banking transaction within three working days, assuming no negligence on their part?
(A) 50% of the transaction amount
(B) Zero
(C) Rs. 10,000
(D) 100% of the transaction amount

86. How does digital financial literacy contribute to the rural economy?
(A) Replacing traditional agricultural activities entirely with information technology roles.
(B) Mandating that all rural citizens purchase high-end costly electronic mobile smartphones.
(C) Empowering villagers to access formal credit, save securely, and avoid moneylenders.
(D) Closing down all physical post offices and rural administration hubs across villages.

107. Which malware specifically encrypts the user's files and demands a financial payment to restore access?
(A) Ransomware
(B) Spyware
(C) Adware
(D) Keylogger

108. A keylogger is a type of malicious software that can compromise digital banking security by:
(A) Unexpectedly turning off the computer monitor during active use
(B) Automatically deleting stored system files from the local hard drive
(C) Recording user keystrokes to capture sensitive passwords and PINs
(D) Generating fake fraudulent QR codes on commercial payment websites

109. Which of the following is NOT a benefit of adopting digital payment systems for the government?
(A) Increasing overall operational transparency in monetary payment flows
(B) Substantially reducing national costs associated with printing currency
(C) Facilitating efficient direct benefit transfer distributions of subsidies
(D) Achieving complete elimination of the requirement for internet networks

110. Consider the following statements about cyber financial frauds:
I. Sharing screen-mirroring apps like AnyDesk with unknown callers can lead to bank fraud.
II. Fraudsters often create urgency to panic the victim into transferring funds.
III. Legitimate banks frequently ask for the UPI PIN over a phone call to verify accounts.
Which of the statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II and III

111. What is the full form of UTR, a term commonly used when tracking NEFT and RTGS transactions?
(A) Universal Transfer Record
(B) Unique Transaction Reference
(C) Unified Transfer Route
(D) User Transaction Receipt

112. Which of the following statements about 'Blockchain' in the context of cryptocurrencies is most accurate?
(A) A physical registry book maintained by central banks to track bitcoins
(B) A sophisticated computer virus designed to steal credit card information
(C) A mobile security application used to block unsolicited bank SMS alerts
(D) A distributed and decentralised digital ledger recording secure transactions

113. Under the Information Technology Act 2000, which component gives legal recognition to electronic documents and digital signatures in India?
(A) Digital Signature Certificates issued by a Certifying Authority
(B) Specific statutory provisions outlined under IT Act Section 66A
(C) Executive directives framed under the Reserve Bank of India Act
(D) Regulatory provisions authorized under Banking Regulation Act

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114. Which digital tool enables a rural citizen to digitally store their land records, caste certificate, and educational marksheets?
(A) PhonePe
(B) PMJDY
(C) DigiLocker
(D) AEPS

115. A customer uses a 'Tap and Pay' feature at a retail store. The transaction completes without entering a PIN. As per current RBI guidelines, up to what amount is a PIN generally not required for such contactless transactions in India?
(A) Rs. 1,000
(B) Rs. 2,000
(C) Rs. 5,000
(D) Rs. 10,000

116. Match the following cyber security threats in List I with their primary mechanisms in List II.
List I: Threat
P. Phishing
Q. Vishing
R. Skimming
S. Malware
List II: Mechanism
1. Copying data from a card's magnetic stripe
2. Malicious software designed to damage or disrupt a system

3. Fraudulent emails posing as legitimate entities
4. Fraudulent voice calls designed to extract sensitive data

(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-1, R-4, S-2
(C) P-1, Q-2, R-3, S-4
(D) P-3, Q-4, R-1, S-2

117. What does the term 'Financial Inclusion' aim to achieve through digital tools?
(A) Increasing the profit margins of private information technology corporations
(B) Providing affordable banking and financial services to unbanked populations
(C) Replacing national currency with foreign currencies in rural local markets
(D) Reducing the total overall number of active mobile phone users in the country

118. Which of the following represents a major challenge in expanding digital financial services in rural India?
(A) An overabundance of trained banking branch administrative staff
(B) Widespread overuse of high-speed 5G internet in rural territories
(C) Inadequate digital literacy and inconsistent mobile network service
(D) Excessive placement of physical automated teller machines in villages

119. A 'Business Correspondent' (Bank Mitra) primarily serves which function in the digital banking ecosystem?
(A) They design user interfaces for commercial bank mobile applications.
(B) They conduct routine technical audits on central bank mainframe servers.
(C) They directly regulate interest rates set by the central monetary authority.
(D) They deliver basic banking services on behalf of banks in unbanked rural areas.

120. Which of the following is considered 'Two-Factor Authentication' (2FA) when logging into net banking?
(A) Entering a password, followed by an OTP received on the registered mobile number
(B) Entering a username and a password
(C) Swiping a debit card twice
(D) Answering two security questions like "What is your pet's name?" and "What is your favourite colour?"

121. What is the fundamental requirement for a successful AEPS transaction?
(A) The customer must possess an active smartphone with mobile data enabled.
(B) The customer's bank account must be linked with their Aadhaar number.
(C) The customer must carry a physical chip debit card to the micro-ATM location.
(D) The transaction value must exceed a minimum threshold amount of Rs. 10,000.

122. Which of the following apps is generally NOT classified under the category of a mobile banking app?
(A) YONO SBI
(B) WhatsApp Messenger
(C) iMobile Pay by ICICI
(D) HDFC MobileBanking

123. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Transactions done via NEFT are credited to the beneficiary account instantly, without any delay.
Reason (R): NEFT operates on a Deferred Net Settlement (DNS) basis, where transactions are settled in batches.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

124. Which digital financial initiative allows feature phone users to make UPI payments securely?
(A) UPI Lite
(B) WhatsApp Pay
(C) UPI 123Pay
(D) DigiLocker

125. What is the main purpose of 'UPI Lite'?
(A) To enable seamless cross-border international fund transfer transactions
(B) To provide micro-credit loans directly to registered small business owners
(C) To monitor real-time geographical positioning location of mobile app users
(D) To facilitate small transactions without entering PINs for faster processing

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126. A digital signature certificate is typically stored on which type of hardware device for high-security applications in India?
(A) High-density Floppy Diskette
(B) High-capacity Magnetic Tape
(C) USB Crypto Token (e-Token)
(D) Standard Optical CD-ROM

127. Which of the following combinations of keystrokes is not a shortcut, but a strong password practice?
(A) Reusing simple generic dictionary terms like 'password123'
(B) Using a mix of uppercase, lowercase, numbers, and symbols
(C) Using personal numeric details like the user's date of birth
(D) Setting simple administrative user handles like the word 'admin'

128. If a bank uses an 'HTTPS' website, what does the 'S' stand for?
(A) System
(B) Server
(C) Software
(D) Secure

129. Why is Public Wi-Fi considered dangerous for digital banking transactions?
(A) Hackers can potentially intercept unencrypted transaction data on the network.
(B) The network transmission speed is inherently too fast for secure banking protocols.
(C) Public Wi-Fi access points automatically block all certified banking web domains.
(D) Financial institutions impose surcharge fees for transactions over public networks.

130. Consider the following statements regarding the RBI's role in digital payments:
I. It operates the NEFT and RTGS systems.
II. It oversees the functioning of the NPCI.
III. It prints physical currency but has no jurisdiction over digital currency.
IV. It sets guidelines for the maximum charges levied on digital transactions.
Which combination of statements is correct?
(A) I, II, and III only
(B) I, II, and IV only
(C) II, III, and IV only
(D) I, III, and IV only

131. Which of the following is an example of an open digital wallet in India?
(A) A wallet issued by a bank enabling cash withdrawals at ATMs and payments everywhere.
(B) A wallet issued by a mobile operator permitting payments but restricted from ATM cash.
(C) A specialized electronic transit card usable strictly for local metro rail system fares.
(D) A prepaid digital gift voucher card issued by an e-commerce website for store shopping.

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132. What does 'Biometric Authentication' involve in the context of digital security?
(A) Authenticating identity by typing a secret alphanumeric password
(B) Authenticating identity by entering a dynamic SMS one-time password
(C) Authenticating identity by scanning a printed optical payment QR code
(D) Authenticating identity using physical traits like fingerprints or face

133. Which component of a computer system is most responsible for encrypting data before it is sent over the internet during a banking transaction?
(A) The peripheral visual display monitor device
(B) Operating system and web browser software
(C) The attached physical document paper printer
(D) The handheld optical computer mouse unit

134. Identify the odd one out in the context of Indian digital payment gateways.
(A) BillDesk
(B) Razorpay
(C) MS PowerPoint
(D) CCAvenue

135. Consider the following statements about e-KYC:
I. It eliminates the risk of forged physical documents.
II. It reduces the turnaround time for opening a bank account.
III. It requires the customer to visit the bank branch with original physical documents.
Which of the statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

136. A person receives an email offering a multi-million dollar lottery, asking them to deposit a 'processing fee' into a specific bank account. This is a classic example of:

authentication and protecting linked bank accounts against unauthorized money transfers.

68. (D) To replace actual card details with an alternate code to improve payment security
Tokenisation replaces actual payment card details, such as the sixteen-digit card number and expiration date, with a unique alternative code called a token. This process prevents online merchants from storing actual sensitive card data, significantly reducing data exposure risks and enhancing electronic transaction security across digital payment gateways.

69. (B) Unexplained account debits or alerts for purchases not made by the user
Unexplained debit alerts or transaction notifications for purchases not initiated by the account holder indicate that account credentials have been compromised. Unrecognized account activity signals unauthorized access by third parties, necessitating immediate contact with the issuing bank to block payment cards, freeze accounts, and prevent further financial loss.

70. (B) 12
An Aadhaar number consists of twelve unique digits issued by the Unique Identification Authority of India to residents. This identification number serves as a foundational digital identity proof, enabling e-KYC verification, direct benefit transfers, and biometric authentication for financial inclusion schemes and banking services across the country.

71. (D) Card Verification Value
Card Verification Value is a security code printed on the back of payment cards, typically consisting of three digits on Visa and Mastercard products. It acts as an authentication measure during card-not-present transactions, verifying that the person making an online purchase possesses the physical payment card at that moment.

72. (A) It charges a flat Rs. 100 fee for every transaction.
The BHIM application, standing for Bharat Interface for Money, was created by the National Payments Corporation of India to facilitate seamless digital payments using VPAs or mobile numbers. Contrary to charging steep transaction fees, BHIM offers zero-cost or minimal service charges, promoting accessible digital payment adoption across user demographics.

73. (B) The funds are automatically reversed to the customer's account within a set time frame.
When a Point of Sale terminal declines a transaction but funds are debited from the customer's bank account, automated reconciliation protocols reverse the debited amount. The financial institutions reconcile failed transaction entries, returning funds to the customer's account within mandated regulatory timelines without requiring permanent forfeiture of funds.

74. (B) SMS messages used to trick users into revealing sensitive data or downloading malware.
Smishing is a form of cyber attack where criminals send deceptive text messages to mobile phones. These SMS messages attempt to trick recipients into downloading malicious software, clicking fraudulent web links, or revealing confidential banking information, personal identification numbers, and single-use passcodes to execute unauthorized financial theft.

75. (D) I, II and III
Real Time Gross Settlement is managed by the central bank to process high-value monetary transfers. Transactions are settled continuously on an individual gross basis in real time without batching delays. This system ensures immediate, final, and irrevocable settlement of funds across participating financial institutions for institutional and corporate customers.

76. (C) Digital authentication using Aadhaar and biometric/OTP verification procedures.
Electronic Know Your Customer replaces physical identity documentation with instant digital verification. By leveraging Aadhaar numbers combined with biometric data or single-use passcodes, financial entities query central databases electronically to authenticate customer identity details, significantly reducing account opening times while maintaining strict regulatory compliance and paperless security standards.

77. (D) Setting Standing Instructions or AutoPay
Standing Instructions or AutoPay features within internet banking portals allow users to schedule automatic, recurring fund transfers for utility bills, loan installments, and subscription fees. Once configured, the system automatically executes payments on specified dates, ensuring timely settlements without requiring manual

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ANSWERS

1. (A) To deliver financial services electronically to unbanked populations
Digital financial services aim to bridge the financial inclusion gap by expanding secure access to basic banking functions through electronic channels. By deploying mobile platforms and digital networks, these services allow underserved communities and unbanked populations to store value, execute transfers, and access credit without relying on traditional physical branch infrastructure.

2. (C) National Payments Corporation of India
The National Payments Corporation of India acts as an umbrella organisation for operating retail payments and settlement systems across the country. Established under the guidance of the central bank and commercial banking entities, it designs robust payment infrastructure, managing key platforms including unified interfaces, switch networks, immediate payment services, and automated clearing systems nationwide.

3. (A) Both Statement I and Statement II are correct
Net banking requires a web browser and internet connection to access portal features provided by financial institutions. Mobile banking functions through dedicated banking applications installed on smartphones. Both operational delivery mechanisms enable registered users to execute account inquiries, manage profile settings, and perform electronic fund transfers conveniently without visiting physical branch locations.

4. (D) Electronic Clearing Service (ECS)
Electronic Clearing Service was introduced as an early automated mechanism for bulk transfer of funds from one bank account to multiple accounts or vice versa. It facilitated repetitive bulk payments such as dividends, salaries, pensions, and utility bill collections prior to the widespread advent of modern smartphone-based instant real-time payment interfaces.

5. (B) MS Excel
Payment applications process monetary transactions through linked bank accounts, digital wallets, or payment networks. Platforms such as Google Pay, PhonePe, and Paytm provide infrastructure for electronic payment processing, peer-to-peer transfers, and merchant settlements. In contrast, spreadsheet software like Microsoft Excel is designed strictly for data organization, numerical analysis, and reporting functions.

6. (C) UPI
Unified Payments Interface enables instant real-time fund transfers between bank accounts using a Virtual Payment Address. This mechanism eliminates the necessity of sharing sensitive banking details such as account numbers or routing codes during transactions. Users can initiate and approve peer-to-peer or merchant transfers directly through mobile applications using a secure pin.

7. (D) A physical credit card
Unified Payments Interface requires a bank account, a linked registered mobile number for identification, and a mobile device with network connectivity. The platform functions directly through bank-to-bank electronic transfers using Virtual Payment Addresses or mobile numbers. Physical credit cards are independent payment instruments and are not mandatory for basic system operations.

8. (A) National Payments Corporation of India
The National Payments Corporation of India developed and operates the Unified Payments Interface platform. Established as an umbrella organization under guidance from the central bank, it oversees retail payment architecture. It regulates protocol standards, facilitates interbank clearing processes, and ensures secure interoperable digital financial transactions across participating commercial banks and third-party applications.

9. (D) I, II and III
Applications such as Google Pay, PhonePe, and Paytm run on the common Unified Payments Interface framework managed centrally. They require a personal identification number to authorize financial debits from accounts. Furthermore, these platforms support linking

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multiple savings or current accounts to a single mobile application, allowing seamless account selection during transfer operations.

10. (B) A debit card deducts money directly from a bank account, whereas a credit card borrows funds up to a preset credit limit.
A debit card acts as a direct payment tool linked directly to an existing bank account, deducting available funds immediately upon transaction execution. Conversely, a credit card provides a revolving credit line issued by a financial institution, allowing users to borrow funds up to an approved limit and repay them later.

11. (A) It acts as an additional security feature for online or card-not-present transactions.
The Card Verification Value is a three or four digit security code printed on physical payment cards. It serves to verify that the transaction initiator possesses the actual card during card-not-present transactions, such as online e-commerce purchases. This verification process reduces unauthorized usage risks and significantly enhances remote electronic transaction safety protocols.

12. (C) P-2, Q-1, R-4, S-3
Payment applications are associated with specific parent corporate entities or technology organizations. Google Pay operates under Alphabet Incorporated, while Paytm is owned by One97 Communications. PhonePe functions under the ownership of the Walmart and Flipkart Group, and BHIM was natively developed by the National Payments Corporation of India to promote digital transactions.

13. (D) They can process transactions without any network or telephone connection.
Point of Sale terminals are electronic payment devices deployed at merchant establishments to process card payments. These machines require active telecommunication lines, cellular networks, or internet connections to establish secure communication with payment gateways and issuing banks for authorization, making completely offline transaction processing without any network access impossible in standard commercial environments.

14. (C) An open wallet permits cash withdrawals at ATMs, whereas a closed wallet restricts usage to purchases from a specific merchant.
An open digital wallet is issued directly by or in partnership with a bank, allowing users to buy goods, transfer funds, and withdraw cash at automated teller machines. In contrast, a closed wallet is issued by a specific merchant to buy products exclusively from that vendor, prohibiting cash withdrawals or transfers.

15. (B) The wallet balance increases, drawing funds directly from a linked bank account, debit card, or credit card instrument.
Adding money to a digital wallet involves transferring monetary value from an underlying source, such as a linked bank account, debit card, or credit card, into the wallet's stored balance. This action increases the available electronic wallet balance, enabling quick subsequent digital payments for various retail merchant transactions or service bills.

16. (D) Paytm Wallet
A semi-closed digital wallet allows users to purchase goods and services at participating contract merchants and perform financial transfers, but strictly restricts cash withdrawals by the holder. Paytm Wallet operates as a semi-closed wallet regulated by monetary authorities, offering versatile payment utilities while excluding automated teller machine cash redemptions.

17. (D) Statement I is incorrect but Statement II is correct
Aadhaar Enabled Payment System allows financial transactions using customer biometric authentication, eliminating the need to remember complex alphanumeric passwords. Customers perform cash withdrawals, balance checks, and transfers using their unique Aadhaar number and fingerprint or iris scans at micro-ATMs. Therefore, biometric data validates identity, making password memory unnecessary.

18. (C) Assertion (A) is true but Reason (R) is false.
One Time Passwords provide a dynamic second factor of authentication for digital transactions, protecting financial accounts against unauthorized access. However, OTPs do not remain valid indefinitely; they expire within a short specified time window to maintain security.

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Once expired, the OTP cannot complete the transaction, requiring a new code generation.

19. (A) AEPS
The Aadhaar Enabled Payment System is ideally suited for rural merchants operating MicroATMs to offer financial services. It permits customers to execute cash withdrawals and balance inquiries using biometric authentication linked to their Aadhaar numbers. This eliminates reliance on physical cards, internet banking passwords, or branch visits in remote unbanked regions.

20. (D) Opening a demat account for secondary market stock trading
Aadhaar Enabled Payment System provides essential retail financial services including cash withdrawals, balance inquiries, mini-statement generation, and fund transfers between Aadhaar-linked bank accounts. However, opening demat accounts for secondary stock market trading involves specialized financial regulatory processes and capital market brokers, falling entirely outside the scope of basic services provided by AEPS.

21. (B) Real Time Gross Settlement
Real Time Gross Settlement represents an electronic fund transfer system where transaction processing occurs continuously in real time. Settlement takes place on a gross basis across central bank books, meaning each individual transfer is settled independently without netting against other transactions. This system is designed primarily for high-value interbank and customer payments.

22. (C) NEFT
National Electronic Funds Transfer operates on a deferred net settlement basis, where financial transactions are accumulated and processed in half-hourly batches throughout the day. Unlike real-time settlement mechanisms that process transactions individually, NEFT nets entries within fixed settlement windows to execute scheduled electronic money transfers across participating financial institutions.

23. (D) It can only be initiated in person from a bank branch during working hours.
Immediate Payment Service operates continuously twenty-four hours a day, seven days a week, including weekends and public holidays. It facilitates real-time money transfers using mobile devices, internet banking portals, and automated teller machines. Users do not need to visit a physical bank branch, as transactions are initiated remotely via digital channels.

24. (C) Rs. 2,00,000
Real Time Gross Settlement is designed specifically for high-value monetary transfers. The Reserve Bank of India has stipulated a minimum threshold amount of two lakh rupees for initiating an RTGS transaction. Smaller transaction values below this specified threshold must be processed using alternative mechanisms such as NEFT or Immediate Payment Service.

25. (C) IV only
The BHIM application was created by the National Payments Corporation of India and supports multiple regional Indian languages. While the mobile application requires active internet access for processing, BHIM operates across all UPI-compliant bank accounts and applications. Users can seamlessly transfer money to any recipient using a Virtual Payment Address, regardless of application choice.

26. (B) It stores merchant details or a payment link that can be scanned by a smartphone camera.
Quick Response codes in digital payments serve as two-dimensional machine-readable barcodes containing merchant payment information, virtual payment addresses, or transaction links. Scanning the code with a smartphone camera automatically retrieves payment details within a financial application, allowing customers to complete transactions securely without manually entering account numbers or routing codes.

27. (A) A QR code generated by one UPI app can be scanned and paid using any other UPI app.
Interoperability in QR code payments signifies that a standardized payment code generated by one financial application can be scanned and processed using any other compliant payment software. This open standard allows merchants to display a single unified QR code while accepting payments seamlessly across diverse banks and third-party digital payment service applications.

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28. (C) BHIM
Bharat Interface for Money was specifically launched by the Government of India to promote simple, fast, and secure digital payments. Developed by the National Payments

(A) Advance Fee Fraud / Phishing
(B) Direct Benefit Transfer scheme
(C) Cross-border e-commerce trade
(D) Digital investment return plan

137. Which government initiative established Common Service Centres (CSCs) across India to deliver digital services to rural areas?
(A) Make in India
(B) Digital India
(C) Skill India
(D) Startup India

138. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Jan Dhan Yojana played a foundational role in enabling digital banking for the rural poor in India.
Reason (R): Jan Dhan Yojana mandated that every individual must buy a smartphone to open a bank account.
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

139. Match the physical card elements in List I with their functions in List II.
List I: Card Element
P. EMV Chip
Q. Magnetic Stripe
R. 16-digit Number
S. Expiry Date
List II: Function
1. Indicates the validity period of the card
2. A microchip that securely stores card data and generates dynamic codes
3. The primary account number (PAN) unique to the cardholder
4. A dark band on the back storing static card information
(A) P-2, Q-4, R-3, S-1
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-4, S-2

140. Consider the following statements about Central Bank Digital Currency (CBDC) in India:
I. It is a legal tender issued by the RBI in a digital form.
II. It can be exchanged one-to-one with fiat currency.
III. Its value fluctuates wildly like private cryptocurrencies such as Bitcoin.
IV. It aims to reduce the operational costs associated with physical cash management.
Which combination of statements is correct?
(A) I, II, and III only
(B) I, II, and IV only
(C) II, III, and IV only
(D) I, III, and IV only

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it uses public key cryptography to bind sender identity with document contents, ensuring data non-repudiation and preventing unauthorized tampering during electronic transmissions.

39. (D) Phishing
Phishing represents a fraudulent cyber attack where malicious actors impersonate legitimate financial institutions using deceptive emails, messages, or websites. The primary objective is to manipulate unsuspecting victims into revealing sensitive personal credentials, including bank account logins, payment card details, passwords, and security codes, leading to identity theft and monetary loss.

40. (A) Skimming
Skimming is a criminal technique involving the installation of covert electronic reading devices on automated teller machines or point-of-sale terminals. These malicious attachments capture magnetic stripe data from physical payment cards, while hidden cameras or overlay keypads record personal identification numbers, allowing fraudsters to clone cards and make unauthorized transactions.

41. (B) Immediate Payment Service
Immediate Payment Service is an instant interbank electronic fund transfer system in India. Operated by the National Payments Corporation of India, it enables continuous, real-time money transfers between participating bank accounts twenty-four hours a day through channels such as mobile applications, internet banking, and automated teller machines.

42. (B) Point of Sale
Point of Sale refers to the physical location or electronic device where commercial transactions occur and customer payments are processed. In payment ecosystems, POS terminals read card data, interface with acquiring bank networks, request authorization, and print transaction receipts, allowing merchants to accept credit cards, debit cards, and contactless payments.

43. (A) Aadhaar Enabled Payment System
Aadhaar Enabled Payment System is a bank-led financial model developed in India to promote digital inclusion. It allows account holders to perform basic banking transactions, including cash deposits, balance inquiries, and withdrawals, at micro-ATMs using their unique Aadhaar number and biometric fingerprint or iris scan authentication.

44. (C) Paying a Rs. 50 auto fare quickly without entering sensitive bank account details
Digital wallets excel at processing fast, low-value micro-transactions for everyday consumer activities. Paying small routine expenses, such as transit fares or retail purchases, through a digital wallet avoids inputting sensitive banking account credentials repeatedly while providing instant balance updates and smooth checkout experiences directly from mobile devices.

45. (D) P-1, Q-2, R-4, S-3
Real Time Gross Settlement handles minimum transfers of two lakh rupees. National Electronic Funds Transfer clears transactions in half-hourly batches. Immediate Payment Service provides instant twenty-four-hour interbank transfers using account details and routing codes. Unified Payments Interface facilitates instant real-time payments using a Virtual Payment Address without sharing underlying bank credentials.

46. (C) Block the card or account by contacting the bank's support immediately
When observing unauthorized activity on a bank account, immediate notification to the issuing financial institution is critical. Requesting an instant block on payment cards or account access halts further fraudulent transactions. Prompt reporting limits customer liability under regulatory guidelines and allows bank security teams to initiate immediate protective measures.

47. (B) Banking Ombudsman
The Banking Ombudsman is a quasi-judicial authority established by the central bank to address customer grievances against financial institutions. It resolves complaints regarding deficiencies in banking services, including unauthorized digital debits, transaction delays, and administrative failures, providing a cost-free, formal alternative dispute resolution process for account holders.

48. (C) Statement I is correct but Statement II is incorrect
Digital financial literacy encompasses the knowledge and skills needed to navigate electronic financial tools, manage digital accounts securely, and avoid online fraud. This capability is essential for all citizens participating in

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modern economies, rather than being restricted to technology specialists or banking employees responsible for maintaining computer hardware systems.

49. (A) Decentralised ledger technology such as blockchain
Cryptocurrency is a form of digital currency built on decentralized ledger technology, primarily blockchain networks. It operates without a central governing authority or physical backing, relying on distributed consensus protocols and advanced cryptographic encryption to secure transactions, verify ownership records, and control the creation of additional currency units across network nodes.

50. (C) They operate on a decentralised peer-to-peer network.
Traditional cryptocurrencies such as Bitcoin function on decentralized, peer-to-peer computer networks using cryptographic consensus algorithms. They operate independently of central banks or government institutions, maintaining transaction records on distributed ledgers without requiring physical paper notes, centralized clearing houses, or mandatory cash balance reserves within commercial banking systems.

51. (A) It acts as the primary regulator and formulates overall policies for payment systems.
The Reserve Bank of India acts as the primary monetary regulator and policy-making body overseeing payment and settlement systems across the nation. It formulates regulatory frameworks, establishes security standards, issues licenses to payment system operators, and protects consumer interests to ensure stability and efficiency within the digital financial ecosystem.

52. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Expanded mobile networks and smartphone accessibility have transformed rural financial inclusion by providing direct access to banking portals. Rural citizens can perform transfers, check account balances, and apply for services without traveling to physical branches, directly supporting the assertion that telecom penetration accelerates digital inclusion across remote regions.

53. (B) Distributed Ledger Technology or blockchain principles
Central Bank Digital Currency utilizes Distributed Ledger Technology or underlying blockchain architectural concepts to manage digital currency units. This technology provides secure, immutable transaction recording and verifiable digital issuance, enabling central monetary authorities to issue programmable, sovereign digital currency that operates alongside traditional physical notes and coin reserves.

54. (C) Ensuring access to useful and affordable financial products and services for all individuals.
Financial inclusion refers to delivering accessible, affordable, and timely financial products and services to all segments of society, particularly underserved populations. It encompasses basic bank accounts, payment channels, savings tools, credit facilities, and insurance products, empowering individuals to participate fully in formal economic activities through digital and physical infrastructure.

55. (D) Entering your UPI PIN to authorise the deduction
When a collect request is initiated through a Unified Payments Interface application, the payer receives a notification detailing the requested amount and beneficiary. To approve the monetary transfer and authorize account debiting, the payer must enter their confidential UPI PIN, ensuring explicit authentication before funds leave the account.

56. (A) Using voice calls to trick individuals into revealing sensitive financial info
Vishing, or voice phishing, is a social engineering attack where fraudsters use phone calls to manipulate individuals into disclosing sensitive personal and financial details. Perpetrators often impersonate trusted banking officials or authority figures to steal account passwords, credit card details, and single-use authentication passcodes for unauthorized financial access.

57. (B) Virtual Payment Address
Virtual Payment Address is a unique identifier used in the Unified Payments Interface ecosystem to map a customer's bank account. Serving as a virtual handle, it allows users to send and receive money securely without disclosing sensitive banking credentials such as account numbers or bank branch routing codes.

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58. (B) Using an unencrypted public Wi-Fi network to enter net banking credentials
Executing financial transactions over unencrypted public Wi-Fi networks exposes sensitive credentials to cyber risks. Attackers can intercept network traffic on unsecured public wireless access points to steal login details, passwords, and banking data. Secure transactions should always be conducted using encrypted private networks or personal mobile data connections.

59. (A) A software app that securely stores payment details for various payment methods.
A digital wallet is a software application hosted on electronic devices that securely stores user payment credentials, digital card details, or prepaid money balances. It allows consumers to conduct quick, electronic transactions, pay retail bills, and execute online payments without carrying physical cards or cash during purchases.

60. (A) I, II, and III only
Common Service Centres deliver digital financial access in remote areas, while inconsistent network infrastructure remains a significant barrier to rural adoption. AEPS simplifies subsidy withdrawals via biometric authentication. However, physical cash usage persists alongside digital methods, making statements regarding complete cash elimination across Indian villages incorrect.

61. (D) USSD based *99# cellular service
Unstructured Supplementary Service Data allows users to access basic banking services by dialing *99# on feature phones without needing an active internet connection. This cellular communication channel operates across basic GSM networks, enabling bill payments, account balance checks, and peer-to-peer transfers for individuals lacking advanced smartphone technology.

62. (C) A farmer receiving PM-KISAN subsidy directly into their bank account
Direct Benefit Transfer refers to the direct electronic transfer of government subsidies and welfare payments into the verified bank accounts of beneficiaries. Government assistance programs, such as agricultural subsidies, reach recipients directly through centralized payment networks, eliminating intermediaries, reducing leakages, and improving overall administrative efficiency and operational transparency.

63. (B) E-wallets facilitate quick micro-transactions without full traditional bank account features.
An e-wallet focuses primarily on executing rapid electronic micro-transactions and payment processing through stored money balances or linked accounts. Unlike comprehensive traditional bank accounts, e-wallets generally do not offer interest earnings, chequebooks, or fixed deposit options, serving as streamlined payment instruments rather than full-service deposit repositories.

64. (D) UPI - Funds transfer using a Virtual Payment Address
Unified Payments Interface allows instant interbank electronic fund transfers using a Virtual Payment Address, eliminating the need to expose account details. Other payment options contain errors: NEFT uses batch processing, debit cards spend deposited funds rather than borrowing, and phishing refers to cyber fraud rather than physical theft of machines.

65. (A) DigiLocker
DigiLocker is an initiative under the Digital India program providing a secure cloud platform for digital document storage and verification. Citizens can store, share, and verify official documents such as educational certificates, driving licenses, and land records electronically, eliminating physical paper dependencies and enabling seamless digital verification across agencies.

66. (A) II, IV, I, III
To complete a QR payment, the user opens the payment app and selects the scan option. Scanning the merchant's QR code reads recipient details into the app. Next, the user inputs the specified transaction amount and approves the financial transfer by entering their confidential UPI PIN to complete authentication.

67. (B) 4 or 6 digits
A UPI PIN is a personal four or six digit security passcode chosen by the account holder during setup. Entering this confidential passcode is mandatory to authorize any financial debit transaction on the Unified Payments Interface platform, providing essential transaction

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Corporation of India, the application utilizes the Unified Payments Interface to allow direct bank-to-bank transfers, balance inquiries, and QR code payments using mobile devices.

29. (D) OTP
A One Time Password is a dynamically generated numerical code sent via text message or email to authorize a single financial transaction. Designed with a limited validity period, such as five minutes, it serves as a critical second factor of authentication to prevent unauthorized account usage and enhance electronic payment security.

30. (C) Because it allows unauthorized persons to complete a transaction on the user's behalf.
Sharing a One Time Password poses severe security risks because it grants full authorization for a transaction to occur on an account. Fraudsters possessing an OTP can bypass security controls, impersonate the genuine account holder, and execute unauthorized transfers or purchases, leading directly to financial theft and account compromise.

31. (B) Barter System → Coins → Paper Money → Plastic Cards → Digital Wallets
The historical evolution of monetary exchange systems began with the barter system, where goods were directly traded. This transitioned into metallic coins, followed by standardized paper currency issued by central authorities. Later, electronic plastic payment cards emerged, ultimately evolving into modern smartphone-based digital wallets for executing instant cashless financial transactions.

32. (D) Pradhan Mantri Jan Dhan Yojana (PMJDY)
Pradhan Mantri Jan Dhan Yojana is a national financial inclusion mission initiated by the Indian government. The scheme aims to provide universal access to banking services by opening basic savings accounts for unbanked households. It provides financial security, direct benefit transfers, credit facilities, insurance coverage, and integrated digital banking tools nationwide.

33. (A) By issuing RuPay debit cards to the account holders
Pradhan Mantri Jan Dhan Yojana account holders are issued RuPay debit cards upon opening their basic savings bank deposit accounts. This physical card allows account holders to perform automated teller machine cash withdrawals, point-of-sale merchant transactions, and digital payment operations, directly linking low-income households to the formal electronic financial ecosystem.

34. (C) Know Your Customer
Know Your Customer is a mandatory identity verification process conducted by financial institutions and banks. It requires customers to submit authentic identity documentation and address proofs before opening accounts or conducting financial services. This process prevents financial fraud, identity theft, money laundering, and illegal activities within the formal banking framework.

35. (A) e-KYC
Electronic Know Your Customer is a paperless, digital process that allows banks and financial institutions to verify a customer's identity instantly. By leveraging central identity databases, e-KYC retrieves authenticated personal details using biometric data or single-use verification passcodes, eliminating physical documentation while ensuring compliance with regulatory verification standards.

36. (D) Aadhaar (UIDAI) database
The e-KYC verification process in India relies primarily on querying the central database managed by the Unique Identification Authority of India using Aadhaar numbers. The database provides authentic demographic and biometric verification, allowing financial service providers to validate customer identities electronically without requiring physical copies of documents.

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37. (B) Using the same password for all financial apps
Using identical passwords across multiple financial applications severely compromises digital banking security. If one service experiences a security breach, attackers can gain unauthorized access to all linked accounts. Safe security practices require unique, complex passwords for each application alongside multi-factor authentication to protect personal financial data against cyber threats.

38. (B) II and III only
A digital signature is an electronic cryptographic mechanism that authenticates the origin and maintains the structural integrity of digital documents. Unlike a scanned physical signature,

intervention or repeated authorization steps from the customer.

78. (C) Near Field Communication or Radio Frequency Identification technology
Contactless card payments rely on Near Field Communication or Radio Frequency Identification technology embedded in physical payment cards. When held close to a compatible merchant point-of-sale terminal, radio frequency signals securely transmit payment credentials wirelessly, enabling rapid payment completion without physical insertion or swiping of the card.

79. (B) The PSP or bank handle providing the underlying UPI service
In a Virtual Payment Address, the text following the '@' symbol identifies the payment service provider or commercial bank hosting the UPI interface. This handle routes the transaction request through proper banking switches to locate the linked account, enabling accurate funds transfer across participating institutions within the network.

80. (D) PM SVANidhi
PM SVANidhi was introduced by the central government to empower street vendors by providing affordable working capital loans. The scheme incorporates digital payment incentives, rewarding vendors with cashback on conducting digital transactions, thereby driving financial inclusion and encouraging formal digital payment adoption among informal micro-merchants operating nationwide.

81. (A) Protecting the internal network from unauthorized access and cyber-attacks
A firewall serves as a network security system that monitors and filters incoming and outgoing network traffic based on predefined security rules. Operating on digital banking servers, it establishes a protective barrier preventing unauthorized external network access, hacker intrusion attempts, and cyber threats from compromising internal financial systems and sensitive data.

82. (C) P-2, Q-4, R-1, S-3
Financial terminology matches specific operational tools: IFSC identifies individual bank branches, MICR codes facilitate cheque clearing via optical readers, UPI PINs authorize digital transfers, and OTPs serve as single-use dynamic passwords. Understanding these distinct functions ensures correct usage and security across various electronic banking channels and settlement processes.

83. (A) Periodically reviewing bank statements for unauthorized debit transactions
Regularly reviewing bank account statements allows account holders to monitor transaction history and identify unauthorized debits or billing discrepancies promptly. Detecting fraudulent activity early enables immediate notification to bank security teams, mitigating financial loss and ensuring protection under regulatory frameworks governing customer liability for unauthorized electronic transactions.

84. (D) Fingerprint and Iris scan
The Aadhaar Enabled Payment System uses fingerprint and iris scan biometrics for authenticating account holders during financial transactions. By matching live biometric scans against stored records in the central Aadhaar database, micro-ATMs verify customer identity securely, permitting cash withdrawals and fund transfers without requiring payment cards or passwords.

85. (B) Zero
Under central bank guidelines, if a customer experiences an unauthorized electronic banking transaction without negligence on their part and notifies the bank within three working days, the customer's liability is zero. The financial institution must credit the debited amount back to the customer's account within specified regulatory timelines.

86. (C) Empowering villagers to access formal credit, save securely, and avoid moneylenders.
Digital financial literacy empowers rural populations by providing knowledge to access formal credit, save securely, and utilize digital payment tools. By avoiding high-interest unorganized moneylenders, rural citizens manage finances safely, participate in government transfer schemes, and invest in local economic activities, driving sustainable rural economic development and inclusion.

87. (D) Ensuring non-repudiation and structural integrity of the electronic document
A digital signature provides legal validity, non-repudiation, and structural integrity to

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Ransomware threatens organizational and personal digital security by halting operations and denying access to vital financial or system data.

108. (C) Recording user keystrokes to capture sensitive passwords and PINs
A keylogger is malicious software or hardware that covertly records every keystroke typed on a computer or mobile device. In digital banking, keyloggers capture sensitive information such as usernames, account passwords, personal identification numbers, and credit card details, transmitting stolen credentials to cybercriminals for unauthorized access.

109. (D) Achieving complete elimination of the requirement for internet networks
Adopting digital payment systems benefits governments by increasing transaction transparency, reducing physical currency printing and distribution expenses, and facilitating direct benefit transfers. However, digital systems rely fundamentally on telecommunication networks and internet access, making complete elimination of internet requirements impossible for modern electronic financial infrastructure.

110. (A) I and II only
Granting remote access through screen-sharing applications like AnyDesk allows fraudsters to view confidential banking credentials, passwords, and OTPs displayed on mobile screens. Additionally, cybercriminals manipulate victims by instilling urgent fear. Legitimate banks never solicit UPI PINs or passwords over telephone calls to verify customer accounts.

111. (B) Unique Transaction Reference
Unique Transaction Reference is a distinct alphanumeric string generated by financial systems to identify individual electronic fund transfers in NEFT and RTGS networks. The UTR code allows banks and customers to track transfer status, verify successful settlements, and resolve transaction queries across participating institutions within the banking ecosystem.

112. (D) A distributed and decentralised digital ledger recording secure transactions
A blockchain is a distributed, decentralized digital ledger that records transactions across a network of computers. Data entries are organized into cryptographic blocks linked chronologically, ensuring immutability, transparency, and resistance to unauthorized alterations without relying on central administrative authorities or traditional intermediary institutions for transaction verification.

113. (A) Digital Signature Certificates issued by a Certifying Authority
The Information Technology Act 2000 grants legal recognition to electronic records and digital signatures in India through Digital Signature Certificates issued by authorized Certifying Authorities. These certificates validate identity, bind signatures to electronic documents legally, and ensure data integrity under established statutory frameworks across various digital transactions.

114. (C) DigiLocker
DigiLocker is an Indian government cloud initiative enabling citizens to securely store, access, and share official documents electronically. Rural citizens use DigiLocker to maintain land ownership records, caste identity documents, and academic certificates, facilitating paperless verification for official administrative, academic applications nationwide.

115. (C) Rs. 5,000
Under central bank regulations, contactless card transactions utilizing Near Field Communication do not require PIN entry for amounts up to five thousand rupees per transaction. For payments exceeding this specified threshold, entering a personal identification number remains mandatory to maintain security against unauthorized lost card usage.

116. (D) P-3, Q-4, R-1, S-2
Cyber threats operate through distinct attack mechanisms: Phishing utilizes deceptive emails to harvest credentials, Vishing relies on fraudulent voice phone calls, Skimming involves copying magnetic stripe data from payment cards, and Malware refers to malicious software engineered to disrupt systems or compromise secure digital environments.

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117. (B) Providing affordable banking and financial services to unbanked populations
Financial inclusion through digital tools seeks to extend accessible, affordable, and formal financial services to unbanked and underserved populations. By leveraging mobile platforms,

including Unified Payments Interface, Immediate Payment Service, and Aadhaar Enabled Payment System, routing transactions securely between commercial banks, service providers, and end users.

98. (C) e₹ is sovereign digital fiat currency, whereas UPI is a payment interface used for moving money between bank accounts.
The digital rupee represents sovereign digital fiat currency issued directly by the central bank as legal tender. In contrast, Unified Payments Interface is a payment processing platform used to transfer money between commercial bank accounts. The digital rupee is money itself, whereas UPI is a channel for moving funds.

99. (A) Virtual Payment Address (VPA)
A Virtual Payment Address serves as a unique username or handle in the UPI payment system. Mapping an account holder's identity to a VPA allows users to receive and send funds without revealing sensitive financial parameters like bank account numbers or IFSC codes, ensuring privacy and streamlining peer-to-peer electronic payments.

100. (D) A smartphone is essential for QR code-based payments.
A smartphone equipped with a camera and mobile internet is essential for scanning and processing QR code-based digital payments. Operating systems on smart devices run payment applications capable of reading barcode data, retrieving merchant payment details, and executing real-time authenticated transactions via linked electronic bank accounts or digital wallets.

101. (B) A handheld POS device used by business correspondents to provide basic banking services.
A MicroATM is a handheld terminal operated by business correspondents to provide basic financial services in unbanked or remote regions. Connected via mobile networks, these portable devices enable cash deposits, withdrawals, fund transfers, and balance checks using biometric authentication, extending core banking access beyond physical branch networks.

102. (A) Customer App → Sender Bank → NPCI Switch → Receiver Bank → Beneficiary Account
During an IMPS transaction, data flows from the customer application to the sender's bank for initial debit validation. The transaction request routes through the NPCI central switch to the receiver's bank, which validates recipient credentials and credits the beneficiary account, returning real-time settlement confirmation across the network.

103. (D) HTTPS
Hypertext Transfer Protocol Secure encrypts communication between a web browser and financial servers using Transport Layer Security protocols. Widely adopted for internet banking, HTTPS protects sensitive transaction data, authentication passwords, and account credentials from interception, tampering, or unauthorized eavesdropping by malicious actors over public or private networks.

104. (D) No fee is charged
The Banking Ombudsman operates as an alternative dispute resolution platform established by the central bank. Filing a complaint regarding failed digital transactions, unauthorized debits, or deficient banking services incurs no charge for customers, ensuring free and accessible grievance redressal for all bank account holders nationwide.

105. (B) Unstructured Supplementary Service Data
Unstructured Supplementary Service Data is a GSM telecommunication protocol used to transmit text messages between mobile phones and network servers. In financial services, USSD allows users to access basic banking operations on feature phones without requiring internet access or smartphone applications, expanding financial inclusion across remote rural regions.

106. (B) BHIM / UPI
Dialing *99# connects users to a national USSD-based mobile banking service built on the Unified Payments Interface platform. Managed by the National Payments Corporation of India, this service enables feature phone owners to transfer money, query account balances, and manage payment profiles using basic cellular networks without internet connectivity.

107. (A) Ransomware
Ransomware is a malicious software category designed to lock or encrypt files on a victim's computing device. Attackers demand financial payment, typically via untraceable cryptocurrencies, to supply decryption keys.

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electronic documents. Cryptographic algorithms generate a unique digital key tied to document content and signee identity, ensuring that any unauthorized modification after signing is detected immediately and confirming that the signer cannot deny originating the transmitted digital document.

88. (A) Asymmetric cryptography utilizing public and private key pairs
Digital signatures rely on asymmetric cryptography, which uses mathematically linked public and private key pairs. The signer encrypts document signature data using their secret private key, while recipients verify authenticity using the corresponding public key. This asymmetric framework secures document integrity, confirms origin identity, and prevents unauthorized alteration during transmission.

89. (C) Assertion (A) is true but Reason (R) is false.
Credit cards provide an interest-free grace period on purchases if full statement balances are cleared by due dates. However, credit cards do not deduct funds directly from savings accounts at purchase time; instead, they draw upon an approved revolving line of credit extended by the issuing financial entity.

90. (B) Debit Card
A debit card directly accesses an existing bank account to settle transactions. To successfully execute a purchase or cash withdrawal using a debit card, sufficient pre-existing monetary funds must be available in the linked account, as money is debited immediately upon transaction authorization without extending short-term credit.

91. (A) The website connection is encrypted and securely authenticated
A lock icon displayed in a browser's address bar signifies that the website connection is encrypted using secure protocols like Transport Layer Security. This encryption protects data exchanged between the user's browser and the banking portal, ensuring privacy, preventing eavesdropping, and confirming authentic server identity during online banking.

92. (C) UMANG
UMANG provides a unified digital platform granting access to a wide range of central and state government services. Users can manage provident fund accounts, file income taxes, pay utility bills, and access government welfare schemes through a single mobile application, simplifying public service delivery and promoting digital governance nationwide.

93. (D) It does not permit users to transfer wallet funds back to bank accounts
A primary limitation of a closed digital wallet is that funds stored within the wallet cannot be withdrawn as cash or transferred to external bank accounts. The balance remains locked within the issuing merchant's ecosystem, restricted strictly to purchasing goods or services directly from that specific vendor platform.

94. (C) IMPS
Immediate Payment Service provides continuous, real-time interbank money transfers operational twenty-four hours a day, including weekends and public holidays. Transferring funds via IMPS on a Sunday night ensures instant credit to the recipient's account, whereas RTGS and traditional clearing processes operate within specific schedule constraints or operational windows.

95. (B) A cyber attack aimed at deceiving individuals into providing sensitive information
Phishing refers to fraudulent cyber activities where attackers send deceptive messages, emails, or websites disguised as reputable institutions. The objective is to trick individuals into disclosing sensitive credentials such as usernames, passwords, credit card numbers, and PINs, enabling unauthorized access to financial accounts and causing identity theft.

96. (A) I, II, and III only
Pradhan Mantri Jan Dhan Yojana is a national financial inclusion mission providing basic zero-balance savings bank accounts equipped with RuPay debit cards. Designed for universal accessibility across both rural and urban areas, statement claiming exclusive urban availability is incorrect, as PMJDY specifically targets unbanked populations in remote rural regions nationwide.

97. (A) NPCI
The National Payments Corporation of India acts as the central switch and umbrella entity managing retail payment systems. It provides core infrastructure for interoperable platforms,

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biometric authentication, and electronic networks, individuals gain safe access to savings, payments, credit, and insurance, fostering equitable economic growth across broader society.

118. (C) Inadequate digital literacy and inconsistent mobile network service
Expanding digital financial services across rural India faces key challenges, including limited digital literacy and unreliable mobile internet infrastructure. Insufficient telecom connectivity prevents consistent transaction execution, while unfamiliarity with digital tools increases vulnerability to financial fraud, hindering smooth adoption of electronic banking in remote villages.

119. (D) They deliver basic banking services on behalf of banks in unbanked rural areas.
Business Correspondents, or Bank Mitras, act as authorized representatives delivering basic banking services to unbanked and rural regions on behalf of financial institutions. Equipped with portable terminals, they facilitate cash deposits, withdrawals, account opening, and fund transfers, bridging geographic distances where physical bank branches are unavailable.

120. (A) Entering a password, followed by an OTP received on the registered mobile number
Two-Factor Authentication enhances net banking security by requiring two distinct identification factors before granting access. Entering a primary password combined with a dynamic One Time Password delivered via SMS combines something the user knows with something the user possesses, preventing unauthorized access even if the primary password is compromised.

121. (B) The customer's bank account must be linked with their Aadhaar number.
A fundamental prerequisite for conducting transactions via the Aadhaar Enabled Payment System is linking the customer's bank account with their Aadhaar number. This association enables micro-ATM terminals to query central databases, verify identity via live biometric matching, and route financial requests to the correct bank account.

122. (B) WhatsApp Messenger
WhatsApp Messenger is primarily a multi-platform instant messaging and communication service rather than a dedicated mobile banking application. While messaging platforms may integrate basic payment features, dedicated mobile banking apps like YONO SBI, iMobile Pay, and HDFC MobileBanking are created by banks to offer full account services.

123. (D) Assertion (A) is false but Reason (R) is true.
National Electronic Funds Transfer processes financial transfers in half-hourly batches using Deferred Net Settlement, meaning transactions are not settled individually in instant real-time. Because settlement occurs in scheduled windows, funds are credited after batch clearing completes, confirming the assertion is false while the explanation regarding DNS is true.

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124. (C) UPI 123Pay
UPI 123Pay is an initiative by the National Payments Corporation of India allowing feature phone users to make digital transactions without an internet connection. Operating through IVR calls, app functionality on feature phones, proximity sound payments, and USSD technology, it extends Unified Payments Interface capabilities to non-smartphone users.

125. (D) To facilitate small transactions without entering PINs for faster processing
UPI Lite is an on-device wallet feature designed to streamline low-value daily transactions. By storing funds locally on the user's device, it allows instant payments without requiring a UPI PIN or real-time interbank processing for each transfer, reducing core banking system loads and improving transaction success rates.

126. (C) USB Crypto Token (e-Token)
Digital Signature Certificates are commonly stored on physical hardware devices known as USB Crypto Tokens or e-Tokens. These secure hardware tokens protect cryptographic private keys from unauthorized export or malware theft, ensuring high-level security, data integrity, and non-repudiation when executing legally binding digital signatures.

127. (B) Using a mix of uppercase, lowercase, numbers, and symbols
Creating strong passwords requires combining uppercase letters, lowercase letters, numbers, and special symbols while avoiding personal information or common dictionary terms. Complex character combinations increase

CHAPTER 16
Future Skills and Cyber Security

1. Which of the following best defines digital literacy in the context of 21st-century skills?
(A) The ability to write complex software programs and algorithms
(B) The ability to find, evaluate, and communicate information using digital platforms
(C) The process of repairing computer hardware and mobile devices
(D) The skill of memorizing keyboard shortcuts for all applications

2. Which of the following is considered an essential 21st-century skill for modern workplaces?
(A) Rote memorization of data
(B) Manual typewriter operation
(C) Analog circuitry design
(D) Problem-solving and critical thinking

3. What is the primary purpose of coding and programming skills in the modern digital economy?
(A) To create instructions that computers can execute to solve problems
(B) To physically assemble computer monitors
(C) To increase the electrical power of a computer
(D) To translate English books into foreign languages

4. Which of the following is NOT a fundamental component of data analytics skills?
(A) Data collection
(B) Data visualization
(C) Hardware soldering
(D) Data interpretation

5. In digital marketing, what is the full form of SEO?
(A) Search Engine Optimization
(B) Secure Electronic Operation
(C) System Entry Operator
(D) Serial Engine Output

6. Which of the following is a widely used digital collaboration tool for remote work?
(A) MS Paint
(B) Adobe Reader
(C) Windows Media Player
(D) Microsoft Teams

7. What is the primary function of an online learning platform?
(A) To provide an online platform for electronic commerce and business transactions
(B) To act as a real-time antivirus scanner and security tool for mobile devices
(C) To deliver educational content and track student progress online
(D) To provide high-speed internet connectivity infrastructure to rural areas

8. Under the Skill India initiative, which portal acts as a central repository for various skill development courses?
(A) Skill India Digital Portal
(B) e-NAM
(C) IRCTC
(D) UMANG

9. Which of the following best defines cyber security?
(A) The physical security measures provided by security guards at corporate IT facilities
(B) The network configuration process of connecting multiple computers to a local network
(C) The practice of protecting digital systems and networks from cyber attacks
(D) The installation of closed-circuit television cameras in a secure data server room

10. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Digital literacy is highly important for citizens today.
Reason (R): Most government services and financial transactions are now accessible through online digital platforms.
In the light of the above statements, choose the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

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138. (C) Assertion (A) is true but Reason (R) is false. Pradhan Mantri Jan Dhan Yojana laid the foundation for rural financial inclusion by opening zero-balance savings accounts, issuing RuPay debit cards, and providing credit and insurance services. However, the scheme never mandated purchasing smartphones to open accounts, as basic banking services remain accessible through physical branches and business correspondents.

139. (A) P-2, Q-4, R-3, S-1
Physical payment card elements serve specific functions: EMV microchips generate dynamic codes for secure chip transactions, magnetic stripes store static card information, sixteen-digit primary account numbers uniquely identify cardholders, and printed expiry dates establish the active valid operational period of the card instrument.

140. (B) I, II, and IV only
Central Bank Digital Currency is legal tender issued digitally by the central bank, exchangeable one-to-one with sovereign fiat money. Designed to lower physical cash management costs, CBDC maintains stable value equivalent to physical money, unlike private cryptocurrencies whose values fluctuate wildly due to speculative market trading.

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entropy, making passwords resistant to brute-force attacks and dictionary cyber attacks, thereby safeguarding digital banking profiles against unauthorized network intrusion.

128. (D) Secure
In the web address protocol HTTPS, the letter 'S' stands for Secure. It indicates that the web session utilizes Transport Layer Security encryption to safeguard communications between a user's web browser and the financial web server, protecting sensitive login data and monetary transactions against unauthorized interception or tampering.

129. (A) Hackers can potentially intercept unencrypted transaction data on the network.
Public Wi-Fi networks present severe cyber security risks for digital banking because they often lack robust encryption protocols. Malicious actors on the same unencrypted network can perform eavesdropping attacks, intercept transmitted credentials, capture session cookies, and steal sensitive financial information entered during active online banking sessions.

130. (B) I, II, and IV only
The central bank operates core settlement mechanisms like NEFT and RTGS, supervises NPCI functions, and establishes upper caps on transaction charges. However, statements claiming the central bank has no jurisdiction over digital currency are incorrect, as it regulates electronic payment frameworks and issues sovereign digital currencies nationwide.

131. (A) A wallet issued by a bank enabling cash withdrawals at ATMs and payments everywhere.
An open digital wallet is issued by or in joint partnership with a banking entity, allowing account holders to execute payments, perform online merchant transactions, and withdraw physical cash at automated teller machines. This functionality distinguishes open wallets from semi-closed or closed prepaid payment instruments in the financial landscape.

132. (D) Authenticating identity using physical traits like fingerprints or face
Biometric Authentication verifies individual identity using unique biological characteristics such as fingerprints, iris patterns, or facial recognition scans. In digital security, biometric verification replaces or complements traditional passwords and PINs, offering higher security against fraud since physical traits are difficult to forge, copy, or illicitly steal.

133. (B) Operating system and web browser software
Operating system components and web browser software execute encryption routines on local computing devices prior to data transmission over the internet. These software applications implement cryptographic protocols like TLS to secure sensitive financial credentials before sending packets across public networks to remote secure banking servers.

134. (C) MS PowerPoint
BillDesk, Razorpay, and CCAvenue function as payment gateways processing electronic monetary transactions for online merchants and consumers. In contrast, Microsoft PowerPoint is a presentation software application designed for creating visual slide shows, making it unrelated to financial transaction processing or digital payment gateway network operations.

135. (A) I and II only
Electronic Know Your Customer verifies identity instantly using centralized database records, reducing account processing times and eliminating paper forgery risks. However, e-KYC operates paperlessly and remotely through biometric or OTP validation, making physical visits to bank branches with original paper documentation unnecessary for completed e-KYC verifications.

136. (A) Advance Fee Fraud / Phishing
Advance Fee Fraud, often conducted through phishing communications, involves deceiving victims into paying upfront fees under the false promise of receiving significant financial windfalls, lottery prizes, or inheritance payouts. Once the processing fee is transferred, perpetrators disappear, leaving victims with substantial monetary losses and unfulfilled promises.

137. (B) Digital India
The Digital India initiative was launched by the Government of India to transform the nation into a digitally empowered society. Under this flagship program, Common Service Centres were established in rural areas to deliver essential digital services, access government schemes, and foster digital financial inclusion across underserved communities.

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(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

11. Which term describes the unauthorized access to a computer system or network to steal, change, or destroy data?
(A) Browsing
(B) Networking
(C) Debugging
(D) Hacking

12. What is phishing in the context of cyber crime?
(A) A hardware enhancement technique used to optimize the processing speed of a central processing unit
(B) A fraudulent attempt to trick users into revealing sensitive data via email
(C) A authorized security testing procedure used by organizations to evaluate network defense mechanisms
(D) A specialized hardware memory architecture designed to store user credentials securely

13. Which of the following cyber crimes involves stealing an individual's personal information to commit fraud in their name?
(A) Cyber stalking
(B) Software piracy
(C) Identity theft
(D) Distributed Denial of Service (DDoS)

14. What does the term 'malware' stand for?
(A) Malfunctioning Hardware
(B) Multiple Awareness
(C) Multipurpose Application
(D) Malicious Software

15. Consider the following statements regarding a computer virus:
I. It is a type of malicious software.
II. It requires a host program to spread.
III. It improves the processing speed of the computer.
Which of the above statements is/are correct?
(A) I only
(B) I and II only
(C) II and III only
(D) I, II and III

16. How does a computer worm differ from a computer virus?
(A) A worm requires human action to spread, whereas a virus does not
(B) A worm can self-replicate and spread independently without a host program
(C) A worm is a hardware component, while a virus is software
(D) A worm only infects mobile phones, while a virus only infects desktop computers

17. Which malicious software disguises itself as a legitimate or useful program to trick the user into installing it?
(A) Tracking Cookie
(B) Firewall
(C) Spam
(D) Trojan Horse

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18. What is the primary characteristic of ransomware?
(A) It encrypts files and demands a ransom payment to unlock them
(B) It permanently deletes critical operating system files without user warning
(C) It secretly records user keystrokes and transmits them to remote advertisers
(D) It generates duplicate copies of large documents to exhaust system storage

19. Spyware is a type of malware that is primarily designed to:
(A) Display persistent unwanted pop-up advertisements during browsing sessions
(B) Lock the desktop operating system until a non-refundable administrative fine is paid
(C) Secretly monitor online user activity and gather sensitive personal information
(D) Scan, diagnose, and repair corrupted operating system files automatically

20. Match List I with List II.
List I: (Types of Malware)
P. Virus
Q. Trojan
R. Ransomware
S. Spyware
List II: (Descriptions)
1. Disguises as legitimate software
2. Needs a host file to infect
3. Secretly tracks user behavior
4. Demands money to restore access
Select the correct answer from the options given below:
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-2, Q-4, R-1, S-3

21. Which practice is most effective in identifying a phishing email?
(A) Assuming any incoming message containing a recognized corporate brand logo is genuine and secure
(B) Checking if the sender's address matches the official organizational domain name
(C) Clicking embedded hyperlinks immediately to verify whether the destination web page is secure
(D) Downloading unverified file attachments to perform an offline security inspection on the device

22. What is spamming in the context of internet usage?
(A) Installing an antivirus program
(B) Updating the operating system to the latest version
(C) Encrypting personal files with a password
(D) Sending unsolicited bulk messages indiscriminately

23. Which of the following is a fundamental principle of creating a strong password?
(A) Combining uppercase and lowercase letters, numbers, and special symbols
(B) Using easily guessable personal information such as your full name or date of birth
(C) Keeping the overall password length short, typically consisting of fewer than 5 characters
(D) Using common default terms such as the word 'password' followed by the current calendar year

24. What does the concept of Two-Factor Authentication (2FA) entail?
(A) Reusing an identical account password across two or more distinct web applications or online services
(B) Typing the account password twice consecutively to confirm correct keyboard entry and spelling
(C) Verifying user identity using two distinct authentication factors (such as a password and an OTP)
(D) Requiring two system administrators to jointly manage and control a single corporate network

25. Consider the following statements about Firewalls:
I. A firewall monitors incoming and outgoing network traffic.
II. It allows or blocks traffic based on defined security rules.
III. It can be either hardware or software based.
IV. It permanently cures physical hardware damage.
Which of the above statements is/are incorrect?
(A) I and II
(B) II and III
(C) I, II, and III
(D) IV only

26. In the context of cyber security, what is the full form of OTP?
(A) Online Transaction Protocol
(B) Open Transmission Path
(C) Optimum Transfer Protocol
(D) One Time Password

27. What is the primary purpose of antivirus software?
(A) To optimize system network protocols and accelerate internet download rates
(B) To safely reformat local hard disk drives without causing physical hardware damage
(C) To detect, prevent, and remove malicious software from computer systems
(D) To automatically generate redundant backup archives for permanently deleted files

28. Which of the following is considered a habit of safe browsing?
(A) Verifying that websites use HTTPS before sharing sensitive credentials
(B) Bypassing or ignoring automated web browser security warning alerts
(C) Storing account login credentials directly within public computer web browsers
(D) Selecting interactive pop-up advertisements promising free online promotional prizes

29. Why is using public Wi-Fi without precautions considered risky?
(A) It accelerates power consumption, rapidly depleting the device battery charge
(B) It causes internal hardware components to physically overheat during operation
(C) It triggers system errors that automatically erase stored contact lists from the phone
(D) It allows unencrypted data to be intercepted by unauthorized third parties

30. Which of the following represents the correct sequence of steps to connect securely to a remote network using a Virtual Private Network (VPN)?

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(A) Connect to internet, launch VPN application, select server and connect, browse safely
(B) Turn on public Wi-Fi, open sensitive banking app, turn on VPN
(C) Launch VPN, turn off internet, open web browser
(D) Browse banking site, disconnect internet, turn on VPN

31. What does data privacy primarily refer to?
(A) The physical protection and security of network server infrastructure inside restricted locked facilities
(B) The systematic distribution of collected user profile data to commercial third-party marketing firms
(C) The technical conversion of plain text information into machine-readable binary code formats
(D) The control individuals exercise over the collection and utilization of their personal data

32. In India, what is the official National Cyber Crime Reporting Portal URL managed by the Government?
(A) www.reportcyber.in
(B) www.cybercrime.gov.in
(C) www.policecyber.com
(D) www.india-cyber-complaint.org

33. The primary law dealing with cyber crime and electronic commerce in India is the:
(A) Information Technology Act, 2000
(B) Indian Penal Code, 1860
(C) Digital Data Act, 2010
(D) Cyber Security Act, 1995

34. Which section of the IT Act, 2000 specifically deals with punishment for identity theft?
(A) Section 43A
(B) Section 67
(C) Section 66C
(D) Section 65

35. The National Cyber Security Policy of India was released in which year?
(A) 2000
(B) 2008
(C) 2013
(D) 2020

36. Which of the following best describes 'Cyberbullying'?
(A) Unauthorized extraction of sensitive financial records and customer account details from a banking institution
(B) Using digital platforms to harass, threaten, or intimidate an individual online
(C) Gaining illegal administrative access to restricted government databases and central file repositories
(D) Distributing unsolicited bulk commercial advertising messages to large numbers of electronic mail accounts

37. What is the full form of CERT-In, a nodal agency for responding to computer security incidents in India?
(A) Computer Emergency Response Team - India
(B) Central Electronic Response Trust - India
(C) Cyber Emergency Reaction Team - India
(D) Cyber Evaluation and Review Team - India

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38. Why is cyber-security awareness important in organizations?
(A) To ensure organizational staff members are capable of repairing malfunctioning computer hardware
(B) To systematically measure and improve the average keyboard typing speed of administrative personnel
(C) To provide comprehensive technical training to employees regarding custom software application development
(D) To minimize data breaches resulting from human error or social engineering tactics

39. Which terminology refers to an attack where the attacker attempts to trick an employee into revealing confidential information through psychological manipulation?
(A) Social Engineering
(B) Brute Force
(C) SQL Injection
(D) Port Scanning

40. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is recommended to update the operating system and applications regularly.
Reason (R): Software updates often include patches for newly discovered security vulnerabilities.
In the light of the above statements, choose the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true

60. Given below are the steps involved in a phishing attack resulting in identity theft:
1. Attacker sends a deceptive email containing a malicious link.
2. User enters sensitive login credentials on the fake page.
3. User clicks the link and is directed to a fake login page.
4. Attacker uses the stolen credentials to access the user's real account.

Which of the following represents the correct sequence of these steps?
(A) 1, 2, 3, 4
(B) 1, 3, 2, 4
(C) 3, 1, 2, 4
(D) 4, 3, 2, 1

61. What does the term 'Incognito mode' or 'Private browsing' do in a web browser?
(A) It completely masks and hides the user's public IP address from their local internet service provider
(B) It automatically blocks all types of malicious software files and scripts from being downloaded
(C) It provides unauthorized free promotional access to subscription-based paywalled web pages
(D) It prevents saving local browsing history, cookies, and site data

62. Which of the following is the most secure method for a remote worker to connect to their company's internal network from a public Wi-Fi hotspot?
(A) Using a Virtual Private Network (VPN)
(B) Using the Incognito mode of a browser
(C) Disabling the computer's firewall
(D) Connecting via Bluetooth

63. What are 'cookies' in the context of web browsing?
(A) Harmful malicious software programs designed to corrupt data and physically destroy the local hard disk drive
(B) Small text files stored on a device to save user preferences
(C) Specialized physical security hardware tokens used by system administrators to authenticate remote network users
(D) Unsolicited animated pop-up promotional advertisements displayed continuously across various web browsing windows

64. What is a 'Digital Footprint'?
(A) The noticeable physical wear mark left by a heavy mechanical computer mouse on an office desk surface
(B) A specialized physical security device utilizing biometric scanning technology to analyze human footprints
(C) The trail of data left behind while using the internet
(D) The total quantitative amount of electrical energy and power consumed by a desktop computer during operation

65. In the context of online security, what is the full form of CAPTCHA?
(A) Computer Application Protocol To Catch Hackers Automatically
(B) Central Authentication Process To Control Human Access
(C) Cyber Awareness Protocol To Control Hacking Activity
(D) Completely Automated Public Turing test to tell Computers and Humans Apart

66. What is the primary purpose of a CAPTCHA on a website?
(A) To prevent automated bots from submitting web forms
(B) To perform real-time automated security scans on the user's computer to detect malware viruses
(C) To apply cryptographic mathematical algorithms to securely encrypt the user's submitted password
(D) To automatically translate dynamic website page content into multiple foreign language dialects

67. Which of the following practices is highly discouraged when using public Wi-Fi?
(A) Accessing and reading general daily news articles on public media websites
(B) Checking public transport train arrival schedules and departure timetables
(C) Browsing through an academic university's public online course catalog
(D) Logging into personal banking accounts

68. Which concept refers to scrambling data into an unreadable format to protect its confidentiality during transmission?
(A) Encryption
(B) Compression
(C) Defragmentation

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4. Running an online ad campaign

Select the correct answer from the options given below:

(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-3, R-2, S-1

51. Which of the following is the most appropriate action if you receive an email from an unknown sender claiming you have won a lottery and asking for your bank details?
(A) Reply with your bank details to claim the money quickly
(B) Forward the email to all your friends so they can win too
(C) Call the number provided in the email and share your details over the phone
(D) Mark the email as spam/phishing and delete it immediately

52. What is 'Vishing' in the context of cyber crime?
(A) Voice phishing using phone calls to extract sensitive data
(B) Visual phishing using deceptive manipulated digital images to mislead online system users
(C) Virus fishing, defined as the active hunting and tracking of malicious computer viruses
(D) Virtual security protocols involving the automated encrypted sharing of account passwords

53. Which of the following is an example of cyber fraud?
(A) Purchasing commercial goods and services online from a verified authentic e-commerce store
(B) Downloading and updating an official banking application directly from an authorized app store
(C) Deceiving an individual into transferring funds via fake UPI payment requests
(D) Creating and configuring a highly secure, complex password for a personal email account

54. In web security, what is the full form of HTTPS?
(A) Hypertext Transfer Protocol Secure
(B) Hypertext Transfer Protocol Standard
(C) Hyper Transfer Text Protocol Secure
(D) High Transmission Text Protocol Standard

55. Consider the following statements regarding strong passwords:

I. A strong password should not contain personal details like a phone number.
II. A strong password is ideally longer than 8-12 characters.
III. Using the same strong password across all accounts increases security.
IV. Passwords should be changed periodically.

Which of the above statements are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

56. What does a padlock icon in the address bar of a web browser indicate?
(A) The visited web page has automatically blocked all incoming pop-up network advertisements
(B) The web server host is guaranteed to be completely free from all types of computer viruses
(C) The online platform requires an active paid membership subscription to grant page access
(D) Communication between the browser and website is encrypted

57. Which feature on a smartphone acts as a biometric layer for Two-Factor Authentication?
(A) Fingerprint scanner
(B) Pattern lock
(C) Volume button
(D) Screen brightness sensor

58. If an antivirus software places a suspected infected file into 'Quarantine', what does it mean?
(A) The file is permanently and unrecoverably deleted from the local computer hard drive
(B) The file is automatically transmitted back to the external hacker over the internet
(C) The file is isolated safely to prevent spreading infection
(D) The file is automatically launched and opened immediately to inspect its code contents

59. Which of the following is the odd one out in the context of network security devices and software?
(A) Firewall
(B) Antivirus
(C) Intrusion Detection System
(D) Microsoft Excel

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77. Which malicious act involves overwhelming a website's server with a flood of internet traffic to make it unavailable to legitimate users?
(A) Fraudulent Identity Theft
(B) Denial of Service attack
(C) Deceptive Phishing Attack
(D) Automated Data Mining

78. In India, what is the toll-free national helpline number specifically designated for reporting cyber fraud and financial cyber crimes?
(A) 100
(B) 1090
(C) 1930
(D) 1098

79. Which of the following is an incorrect statement regarding the IT Act 2000?
(A) It provides legal recognition for electronic documents
(B) It provides a legal framework for electronic signatures
(C) It outlines penalties for cyber crimes like hacking and data theft
(D) It makes the use of cash transactions illegal in India

80. Match List I with List II.
List I: (Cyber Security Term)
P. VPN
Q. Firewall
R. Antivirus
S. OTP
List II: (Description)
1. Filters network traffic
2. Encrypts internet connection
3. Temporary authentication code
4. Scans for malicious software
Select the correct answer from the options given below:
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-2, S-4

81. How does online safety guidance recommend parents protect children from inappropriate web content?
(A) By removing the internet connection entirely from the house
(B) By using parental control software and safe search filters
(C) By creating fake social media accounts for the children
(D) By letting children browse without any supervision to learn independently

82. Which of the following actions constitutes a violation of data privacy?
(A) A company selling user contact details without consent
(B) A user manually clearing their web browser history, cache files, and saved cookies on a personal computer
(C) A healthcare hospital facility storing patient medical records within an encrypted, highly secure database
(D) A commercial website explicitly requesting user permission and consent before storing tracking cookies

83. In the context of secure communications, what is the full form of PIN?
(A) Public Information Node
(B) Private Internet Network
(C) Personal Identification Number
(D) Primary Index Number

84. Which of the following best describes an 'Insider Threat' in organizational cyber security?
(A) An external cyber attacker attempting to breach organizational network defenses from an overseas foreign country
(B) An executable malicious software program accidentally downloaded from an untrusted public third-party website
(C) An unidentified physical defect or operational flaw located directly within the server hardware infrastructure
(D) A security risk originating from internal employees within the organization

85. Consider the following practices for organizational cyber security:
I. Conducting regular phishing simulation tests for employees.
II. Enforcing mandatory password changes every few months.
III. Restricting access to sensitive data on a 'need-to-know' basis.
IV. Disabling all firewalls to increase network speed.
Which of the above statements represent positive security habits?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, and IV

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(D) Compilation

69. Which of the following is NOT an example of a web browser?
(A) Google Chrome
(B) Mozilla Firefox
(C) Google Drive
(D) Microsoft Edge

70. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is dangerous to download pirated software from untrusted websites.
Reason (R): Pirated software is frequently bundled with hidden malware, such as Trojans or spyware.
In the light of the above statements, choose the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

71. What is meant by the term 'Zero-day vulnerability'?
(A) A discovered software bug that developers have successfully patched within a period of exactly zero days
(B) A unpatched software security flaw unknown to the vendor
(C) A specific category of destructive virus designed to wipe all system data precisely at midnight
(D) A commercial antivirus security software package that guarantees absolute protection from all infections

72. Which of the following is a common symptom that a computer might be infected with malware?
(A) The central processing unit operates far more efficiently, allowing the computer to perform tasks noticeably faster
(B) The desktop monitor screen automatically adjusts its backlight settings, causing physical brightness to increase
(C) Unexpected pop-ups, frequent crashes, and slow performance
(D) Mechanical hardware components fail, causing individual desktop keyboard keys to become physically stuck

73. What is 'Smishing'?
(A) Phishing conducted via SMS text messages
(B) Deceptive fraudulent phishing attacks conducted directly through cellular voice calls
(C) A destructive category of malicious malware engineered to corrupt and smash user files
(D) A targeted promotional social media marketing technique used to reach broad audiences

74. If you accidentally click on a suspicious link and realize it might be malicious, what is the best immediate step?
(A) Forward the link to multiple online friends to check whether the destination web page opens successfully for them
(B) Turn off the primary computer monitor display immediately and wait for an hour before turning it back on
(C) Type your personal email account username and password onto the webpage prompt to verify identity credentials
(D) Disconnect from the internet immediately and run a malware scan

75. Consider the following statements about safe password practices:
I. Writing passwords on a sticky note attached to the monitor is secure.
II. Using a reliable password manager is a good way to manage multiple strong passwords.
III. Sharing your password with a colleague for temporary use is standard safe practice.
Which of the above statements is/are correct?
(A) I only
(B) II only
(C) II and III only
(D) I, II, and III

76. In cyber security, what does a 'Keylogger' do?
(A) It automatically generates, manages, and distributes complex cryptographic keys used for data encryption
(B) It records user keystrokes to steal passwords and private data
(C) It acts as a mechanical hardware device that physically secures and locks the external computer cabinet
(D) It tracks, verifies, and manages valid software installation license keys across an enterprise network

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deployment of foreign software applications
(C) To mandate that all academic institutions require every enrolled student to undergo training in advanced computer programming
(D) To build a secure cyberspace for citizens, businesses, and the government

114. Which of the following is a common method to protect personal information on social media?
(A) Restricting privacy settings so only verified contacts view posts
(B) Accepting social networking connection requests from unfamiliar or completely unknown individuals online
(C) Regularly publishing detailed information regarding your daily work routine and real-time physical location
(D) Configuring your personal mobile phone number to serve as your universally visible public account username

115. Consider the following aspects of Digital Literacy:
I. Knowing how to use search engines effectively.
II. Understanding how to evaluate the credibility of online information.
III. Being able to write machine code in assembly language.
IV. Knowing how to protect one's privacy online.
Which of the above statements accurately reflect basic digital literacy skills?
(A) I, II, and III
(B) II, III, and IV
(C) I, II, and IV
(D) I, III, and IV

116. Which of the following malware types is characterized by its ability to spread from computer to computer over a network without requiring any human interaction?
(A) Trojan
(B) Spyware
(C) Adware
(D) Worm

117. What is 'Data Breach'?
(A) The routine physical destruction process of decommissioned corporate hard disk drives
(B) Unauthorized access to or disclosure of confidential data
(C) The authorized public sharing of open-source datasets under standard software licenses
(D) A temporary network service disruption occurring at an internet service provider facility

118. Which of the following passwords is mathematically the hardest for a hacker to crack using a brute-force attack?
(A) tY#7!qP9z$L
(B) password123
(C) admin2023
(D) Ramesh@1985

119. In a business context, what does a 'Phishing Simulation' test achieve?
(A) It permanently filters out and purges all malicious spam emails from external global internet servers
(B) It evaluates employee vigilance using simulated fake phishing emails
(C) It performs automated physical hardware upgrades and memory expansion on corporate email exchange servers
(D) It restricts competing commercial organizations from accessing or viewing public company web pages

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120. Which of the following is NOT an advantage of e-learning?
(A) Enhanced flexibility regarding study schedules, time management, and learning locations
(B) Convenient access to a significantly broader variety of educational courses and certifications
(C) Total elimination of any requirement for an active internet connection
(D) The practical capability for individual students to progress through course material at their own pace

121. What is the full form of VPN?
(A) Visual Private Network
(B) Virtual Public Network
(C) Virtual Private Network
(D) Verified Personal Network

122. Which of the following best defines a 'Digital Signature'?
(A) A scanned digital image file containing an individual's handwritten ink signature appended onto an electronic file
(B) A cryptographic technique verifying document authenticity
(C) A specialized stylus hardware pen instrument manufactured specifically to draw or write on capacitive touch screens

86. Which of the following actions is NOT a recommended cyber security best practice?
(A) Click on 'Unsubscribe' links in suspicious spam emails
(B) Keep software updated
(C) Use a dedicated email for financial transactions
(D) Enable multi-factor authentication on critical accounts

87. What is 'Adware'?
(A) Specialized software utility designed to automatically block and remove promotional advertisements from web pages
(B) Malware that displays unwanted online advertisements
(C) A legitimate graphic design software application used by marketing agencies to create large outdoor billboards
(D) An integrated background antivirus program component specifically engineered to scan incoming email for spam

88. Which cyber crime involves redirecting a website's traffic to another, fake site, even if the user typed the correct URL?
(A) Phishing
(B) Vishing
(C) Pharming
(D) Cyberstalking

89. Ethical hackers who use their skills to secure and protect computer systems are commonly known as:
(A) White Hat Hackers
(B) Black Hat Hackers
(C) Red Hat Hackers
(D) Script Kiddies

90. Which of the following represents the correct sequence of actions to take if your digital identity is compromised (e.g., your bank account is hacked)?
(A) Inform bank/block card → Report to Cyber Police/1930 → Change passwords → Monitor accounts
(B) Change passwords → Monitor accounts → Report to Cyber Police/1930 → Inform bank
(C) Report to Cyber Police/1930 → Monitor accounts → Change passwords → Inform bank
(D) Inform bank → Monitor accounts → Change passwords → Report to Cyber Police/1930

91. The Information Technology Act, 2000 was amended significantly in which year to include provisions related to cyber terrorism and data protection?
(A) 2004
(B) 2008
(C) 2012
(D) 2016

92. Which of the following is a key feature of the DigiLocker initiative under Digital India?
(A) It provides physical secure locker facilities at local post offices for confidential paper document storage
(B) It offers cloud storage and verification for digital documents
(C) It functions primarily as an official government digital wallet service for storing and trading cryptocurrency
(D) It provides free downloadable security software and antivirus tools to all registered Indian citizens

93. What is the full form of URL, a term relevant when checking the legitimacy of a website?
(A) Universal Routing Link
(B) Uniform Resource Locator
(C) United Reference Line
(D) Uniform Retrieval Language

94. What does 'Shoulder Surfing' refer to in the context of information security?
(A) Browsing online websites on a mobile device while standing up or walking in public areas
(B) Transporting a personal laptop computer over one's shoulder through crowded public transit
(C) Executing a direct physical intrusion or hardware attack on a corporate network server rack
(D) Secretly looking over someone's shoulder to observe their PIN or password

95. Which of the following is the best way to securely dispose of a hard drive containing sensitive information?
(A) Deleting personal files manually and subsequently clearing all contents from the system Recycle Bin
(B) Physically destroying the drive or using data wiping software
(C) Reformatting the storage drive using standard operating system quick formatting options

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and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

41. Which of the following is considered a primary benefit of digital marketing over traditional marketing?
(A) It necessitates establishing and maintaining a dedicated commercial physical storefront
(B) It relies primarily on distributing paper marketing materials such as printed brochures and flyers
(C) It enables precise audience targeting and measurable campaign performance analytics
(D) It operates completely offline without requiring any ongoing internet network connectivity

42. Remote work heavily relies on which of the following technological concepts?
(A) Cloud computing and collaboration tools
(B) Analog telephony and typewriters
(C) Localized physical servers with no internet access
(D) Manual ledger keeping

43. Which of the following is NOT an example of a digital collaboration tool?
(A) Slack team messaging software
(B) Google Workspace digital cloud suite
(C) Zoom video conferencing platform
(D) Offline desktop word processor

44. What is the purpose of 'Screen Sharing' in remote collaboration tools?
(A) To physically adjust and position a computer monitor so another person in the room can view it
(B) To transmit one's screen display to meeting participants over a network
(C) To divide a single computer screen interface into multiple independent virtual display areas
(D) To capture a static screenshot image and transmit it to remote recipients through postal mail

45. Consider the following statements about online learning platforms:
I. They provide access to courses from anywhere with an internet connection.
II. They often feature recorded video lectures and digital assignments.
III. They require students to attend a physical classroom daily.
Which of the above statements is/are correct?
(A) I only
(B) I and II only
(C) II and III only
(D) I, II, and III

46. What does LMS stand for in the context of e-learning skills?
(A) Local Management System
(B) Learning Management System
(C) Logical Memory Storage
(D) Linear Module Standard

47. Which government portal in India provides a unified platform for various e-governance services across departments?
(A) NREGA
(B) IRCTC
(C) UMANG
(D) EPF

48. What is the main objective of the Skill India Mission?
(A) To train youth in market-relevant skills for better employability
(B) To distribute free laptop devices and computer hardware to all enrolled students
(C) To guarantee immediate permanent government employment positions to all job applicants
(D) To construct physical educational school infrastructure and classrooms in every rural village

49. Which term describes the extraction of useful patterns and insights from large sets of data?
(A) Data Entry
(B) Data Analytics
(C) Data Formatting
(D) Data Deletion

50. Match List I with List II.
List I: (Future Skill)
P. Coding
Q. Data Analytics
R. Digital Marketing
S. Collaboration Tool
List II: (Application)
1. Analyzing customer trends
2. Developing a software application
3. Conducting a remote video meeting

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within a database
(C) Configuring system settings to hide specific files and administrative folders within the Windows operating system directory structure
(D) Applying full-disk cryptographic software algorithms to encrypt an entire local hard drive partition for maximum file security

105. Consider the following statements about safe email practices:
I. Never open attachments from unknown senders.
II. Verify the sender's email address, not just the display name.
III. Always unsubscribe from spam by replying directly to the spammer.
Which of the above statements is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

106. In India, the 'Right to Privacy' which encompasses data protection, is recognized as a fundamental right under which Article of the Constitution?
(A) Article 14
(B) Article 19
(C) Article 21
(D) Article 32

107. Which tool is most effective for a remote team to manage software versions and collaboratively edit code?
(A) MS Paint
(B) Adobe Photoshop
(C) VLC Media Player
(D) Git / GitHub

108. Which of the following is NOT a form of cyber crime?
(A) Purchasing a licensed software online
(B) Hacking into a bank's server
(C) Distributing pirated movies online
(D) Sending threatening emails (Cyberstalking)

109. What is a 'Patch' in the context of computer software?
(A) A physical replacement hardware component utilized by technicians to repair a damaged motherboard
(B) A software update designed to fix system bugs or security vulnerabilities
(C) A rogue executable program designed specifically to exploit and bypass network firewall protection rules
(D) A specialized Ethernet network cable manufactured to establish direct physical connections between computers

110. Match List I with List II.
List I: (Digital Initiative)
P. UMANG
Q. DigiLocker
R. SWAYAM
S. CyberCrime Portal
List II: (Purpose)
1. Online educational courses
2. Unified platform for e-gov services
3. Reporting cyber offenses
4. Digital document storage
Select the correct answer from the options given below:
(A) P-2, Q-4, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-3, Q-4, R-1, S-2

111. Which term is used for the fraudulent practice of directing internet users to a fake website that mimics the appearance of a legitimate one?
(A) Spamming
(B) Skimming
(C) Spoofing
(D) Streaming

112. Which of the following best describes 'Credit Card Skimming'?
(A) Rapidly scanning or reviewing paper monthly financial records and credit card account billing statements
(B) Illegally capturing data from a credit card magnetic strip during a transaction
(C) Distributing deceptive fraudulent electronic mail messages requesting recipients to submit active credit card numbers
(D) The formal legal procedure performed by a banking institution when revoking and cancelling an active credit card account

113. What is the main objective of the National Cyber Security Policy 2013?
(A) To establish public infrastructure that delivers completely free high-speed broadband internet connectivity to all citizens
(B) To enact strict national trade policies banning the importation and operational

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(D) Selling the old hard drive directly to a commercial second-hand electronics shop without modification

96. What is a 'Botnet'?
(A) An interconnected network of high-speed corporate web servers hosting a public commercial website
(B) An automated artificial intelligence chat assistant integrated into a customer service help portal
(C) A specialized programmable physical industrial robot utilized in automated factory manufacturing
(D) A network of compromised computers controlled remotely to execute attacks

97. Which of the following pairs is incorrectly matched?
(A) Antivirus - Spreads malicious files to other networks
(B) Ransomware - Demands payment for data decryption
(C) Spyware - Steals personal data quietly
(D) Phishing - Deceptive emails claiming to be from trusted sources

98. Why is it dangerous to plug an unknown USB flash drive into your computer?
(A) It could trigger abnormal power consumption, rapidly draining the computer's laptop battery charge
(B) It will cause short circuits that permanently damage and disable all motherboard USB hardware ports
(C) It may automatically execute and install malware on your computer system
(D) It will instantly initiate an unauthorized background upload of all personal files to public cloud storage

99. Which of the following is an example of a biometric security feature?
(A) A complex text password
(B) A smart card
(C) A one-time password sent via SMS
(D) A retina scan

100. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): It is generally safe to conduct online banking on a public computer at a cyber cafe.
Reason (R): Public computers have advanced firewalls that block all credential theft.
In the light of the above statements, choose the correct answer from the options given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

101. Which terminology describes a security mechanism that requires the user to prove their identity in two or more distinct ways before access is granted?
(A) Single Sign-On Architecture
(B) Multi-Factor Authentication
(C) Cryptographic Password Hashing
(D) End-to-End Data Encryption

102. In the context of network security, what does a Virtual Private Network (VPN) primarily do?
(A) It significantly optimizes network throughput to increase raw internet connection speeds
(B) It functions as the main local primary storage drive for operating system files and data
(C) It regulates thermal output and physically cools down the external network router hardware
(D) It creates an encrypted tunnel for data over a public network

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103. If you receive an OTP on your mobile phone for an account, but you did not try to log in, what should you do?
(A) Immediately change your account password to prevent unauthorized access
(B) Disregard the notification completely, assuming it is an automated network glitch, and take no action
(C) Share the one-time authentication code with any unknown individual who contacts you claiming to represent support
(D) Send a direct reply to the incoming text message provider containing your main account password credentials

104. Which of the following describes 'Data Masking'?
(A) Applying a physical anti-glare screen protector guard over the computer monitor to prevent nearby individuals from viewing the display
(B) Obscuring specific sensitive data fields

(D) A transparent graphic or textual watermark added permanently to a digital photograph to indicate copyright ownership

123. Under the IT Act 2000, Section 66E deals with punishment for violation of:
(A) Violation of individual privacy through unauthorized image capture
(B) Unauthorized reproduction and unlawful commercial distribution of copyrighted digital intellectual property
(C) Transmission of unsolicited commercial electronic mail communications in bulk to unverified recipient lists
(D) Unlawful physical theft, burglary, or misappropriation of organizational computer hardware assets

124. Which of the following is considered an essential skill for Data Analytics?
(A) Advanced professional proficiency in vector graphic design software applications such as CorelDRAW or Illustrator
(B) Comprehensive practical knowledge regarding physical network cabling infrastructure and structural wiring installations
(C) Technical expertise in configuring, maintaining, and troubleshooting enterprise internet hardware routers and switches
(D) Ability to process, clean, and analyze raw data effectively

125. Consider the following statements about safe Wi-Fi usage:
I. Home Wi-Fi networks should be secured with WPA2 or WPA3 encryption.
II. Default router admin passwords should be changed immediately after purchase.
III. Open, public Wi-Fi networks are generally fully encrypted and secure.
IV. Turning off Wi-Fi auto-connect in public places reduces security risks.
Which of the above statements are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

126. What does 'Cyber Stalking' primarily involve?
(A) Unlawfully stealing cash funds directly from an automated teller machine through physical tampering
(B) Using electronic means to repeatedly harass a specific individual
(C) Downloading copyrighted music recordings from public online file repositories without a valid user license
(D) Identifying, diagnosing, and repairing software programming code bugs within a desktop software application

127. Which of the following is a symptom of a possible identity theft?
(A) The connected desktop computer monitor suddenly displays an incorrect display screen resolution
(B) An optical computer mouse temporarily ceases functioning when moved across a specific fabric mousepad
(C) A requested public website interface takes significantly longer than usual to complete loading page assets
(D) Receiving credit card billing statements for unapproved accounts

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128. What does 'End-to-End Encryption' ensure in messaging applications?
(A) Only the communicating users can read the encrypted content
(B) Transmitted electronic messages navigate network routers and travel significantly faster across the global internet
(C) The software application automatically translates incoming text messages into various preferred foreign languages
(D) Sent chat messages are permanently deleted from both local device storage and cloud servers after 24 hours

129. Which of the following is an effective tool to protect children from accessing adult or harmful content on the internet?
(A) A VPN connection
(B) A faster broadband connection
(C) Parental Control Software
(D) A defragmentation tool

130. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Employees should lock their computer screens when stepping away from their desks.
Reason (R): Leaving a workstation unlocked allows unauthorized physical access to the organization's data.
In the light of the above statements, choose the correct answer from the options given below:

host executable program and human activity to trigger infection, a worm operates as a standalone software program. Worms possess the unique capability to self-replicate autonomously and traverse network connections independently, exploiting operating system vulnerabilities to infect multiple connected endpoint devices rapidly.

17. (D) Trojan Horse
A Trojan horse is a deceptive form of malware named after the ancient Greek strategy. It disguises its malicious code behind apparently legitimate, useful, or attractive software applications to trick users into downloading and installing it. Once executed on the target device, Trojans grant unauthorized backdoor access to attackers, steal personal information, or drop additional destructive payloads silently.

18. (A) It encrypts files and demands a ransom payment to unlock them
Ransomware is a dangerous category of malware that restricts access to a user's computer system or encrypts sensitive stored files using strong cryptographic algorithms. Once the files are rendered inaccessible, attackers display a extortion message demanding financial ransom, usually in cryptocurrency, in exchange for the decryption key. Paying does not guarantee full data recovery, highlighting proper offline backups.

19. (C) Secretly monitor online user activity and gather sensitive personal information
Spyware is covert malicious software specifically programmed to track and record user activities without their knowledge or consent. It runs silently in the system background, harvesting sensitive information such as browsing history, login credentials, keystrokes, and financial details. The gathered data is subsequently transmitted to remote unauthorized third parties, severely compromising personal digital privacy and security.

20. (A) P-2, Q-1, R-4, S-3
Malware varieties possess distinct functional characteristics. Viruses require host executable files to propagate across systems. Trojan horses disguise themselves as safe programs to deceive users. Ransomware restricts file access by encrypting data and demanding financial payments for decryption keys. Spyware silently tracks online activities and gathers confidential personal data without obtaining user consent, establishing the exact corresponding classifications.

21. (B) Checking if the sender's address matches the official organizational domain name
Identifying fraudulent phishing emails requires careful inspection of sender metadata rather than relying on visual logos, which can be easily copied. Verifying whether the actual sender domain name precisely matches the official domain of the organization prevents falling victim to deceptive spoofs. Avoid clicking embedded links or opening suspicious attachments before establishing the true source of electronic messages.

22. (D) Sending unsolicited bulk messages indiscriminately
Spamming refers to the practice of sending unsolicited bulk electronic messages indiscriminately to large numbers of recipients over the internet. Most commonly occurring through email, spam is used for commercial advertising, promotional schemes, or distributing deceptive phishing links and malware. It consumes network bandwidth, degrades email server efficiency, and poses significant digital security risks to end users.

23. (A) Combining uppercase and lowercase letters, numbers, and special symbols
Creating robust user passwords requires maximizing character entropy to prevent automated cracking attempts. A strong password combines uppercase and lowercase letters, numerical digits, and special characters, while maintaining adequate length. Excluding predictable personal information, such as names or birth dates, prevents social engineering and dictionary attacks, significantly enhancing overall account defense against unauthorized access.

24. (C) Verifying user identity using two distinct authentication factors (such as a password and an OTP)
Two-Factor Authentication is an essential security mechanism designed to protect user accounts by requiring two separate verification components before access is permitted. Typically, this combines something the user knows, like a password, with something the user possesses, such as a temporary dynamic security code

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140. Match List I with List II.

List I: (Cyber Security Concept)

P. Authentication

Q. Data Privacy

R. Social Engineering

S. Malware

List II: (Practical Example)

1. Tricking a user via a fake phone call
2. Using a fingerprint to unlock a phone
3. A Trojan horse virus
4. Ensuring a website does not share your email

Select the correct answer from the options given below:

(A) P-2, Q-4, R-1, S-3

(B) P-1, Q-2, R-3, S-4

(C) P-4, Q-3, R-2, S-1

(D) P-2, Q-1, R-4, S-3

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ANSWERS

1. (B) The ability to find, evaluate, and communicate information using digital platforms
Digital literacy in the twenty-first century encompasses a broad range of essential cognitive and operational skills. It extends beyond basic technical operations to include critically locating, analyzing, creating, and sharing information across digital environments. Understanding these platforms allows individuals to navigate modern information ecosystems responsibly, participate effectively in educational activities, and contribute meaningfully to contemporary workplaces.

2. (D) Problem-solving and critical thinking
Modern workplaces increasingly demand higher-order cognitive capabilities to address complex and unpredictable professional challenges. Problem-solving and critical thinking enable workers to evaluate data objectively, identify underlying issues, and formulate efficient solutions in rapidly changing economic environments. Developing these essential twenty-first-century competencies ensures adaptable decision-making, promotes innovative practices, and supports sustained organizational success across dynamic, technology-driven global industries.

3. (A) To create instructions that computers can execute to solve problems
Coding and programming serve as foundational skills in the modern digital economy by converting complex logic into precise software instructions. Computers process these instructions to automate repetitive tasks, power digital platforms, analyze massive datasets, and develop sophisticated applications. Mastering computational logic drives technological innovation across diverse global industries, facilitating economic efficiency, systemic scalable solutions, and seamless interaction with digital machinery.

4. (C) Hardware soldering
Data analytics focuses entirely on processing, analyzing, and interpreting structured and unstructured datasets to derive meaningful organizational insights. Fundamental stages include systematic data collection, data cleaning, analytical modeling, accurate visual presentation, and strategic interpretation. Physical electronic tasks, such as hardware soldering or circuit assembly, pertain strictly to electrical engineering and hardware manufacturing rather than software-based data analytics methodologies.

5. (A) Search Engine Optimization
Search Engine Optimization represents a core discipline within digital marketing aimed at improving website visibility on web search engine result pages. By enhancing content relevancy, optimizing keywords, improving site architecture, and building authoritative technical links, organizations attract higher organic internet traffic. Effective optimization strategies increase audience engagement, improve brand authority, and maximize online reach without relying exclusively on paid advertisements.

6. (D) Microsoft Teams
Modern remote and hybrid work environments rely heavily on cloud-based collaboration software to facilitate communication across distributed geographic locations. Integrated digital workspace platforms offer real-time text chat, high-definition video conferencing, document storage, and seamless file sharing within a unified environment. These continuous digital channels increase operational efficiency, improve project management tracking, and foster productive remote collaboration across diverse organizational teams.

7. (C) To deliver educational content and track student progress online
Online learning platforms are specialized educational systems designed to facilitate remote academic instruction through structured digital environments. They host multimedia course content, interactive lectures, virtual assessments, and administrative communication channels while systematically tracking student engagement, performance metrics, and assignment submissions. This flexible digital infrastructure democratizes education by enabling self-paced learning, providing centralized access to educational resources, and removing traditional geographical boundaries.

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8. (A) Skill India Digital Portal
The Skill India Digital Hub serves as a unified digital ecosystem introduced under the Skill India initiative to consolidate various national skill development programs. It connects citizens with industry-aligned training programs, apprenticeship opportunities, dynamic job listings, and verified digital skill credentials. By establishing a central repository, the platform simplifies access to career advancement resources, fosters economic empowerment, and aligns training pathways.

9. (C) The practice of protecting digital systems and networks from cyber attacks
Cyber security consists of comprehensive technical strategies, administrative policies, operational processes, and defensive tools used to shield digital assets from cyber threats. It focuses on preserving data confidentiality, system integrity, and service availability against malicious interference, unauthorized access, data theft, and network disruptions. Implementing robust security protocols protects critical technological infrastructure, secures personal privacy, and maintains trust in digital economic transactions.

10. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Digital literacy has become fundamental for active participation in contemporary society due to widespread digital transformation. Essential public infrastructure, municipal services, banking operations, and tax filings are primarily administered online. Consequently, acquiring digital competencies enables citizens to access essential public services efficiently, make secure online financial transactions, and stay informed, directly justifying why digital literacy is essential for modern civic life.

11. (D) Hacking
Hacking involves exploiting technical vulnerabilities in computer systems, hardware, or digital networks to gain unauthorized system access. Perpetrators bypass established security barriers to alter software functionality, exfiltrate confidential data, or compromise system performance. While ethical security testing exists, unauthorized hacking remains a major cyber crime that damages organizational security, threatens digital privacy, and leads to significant financial or data loss.

12. (B) A fraudulent attempt to trick users into revealing sensitive data via email
Phishing is a malicious social engineering strategy where cybercriminals send deceptive messages masquerading as trustworthy organizations. These emails typically urge targets to click fraudulent web links or update private details on spoofed websites. The primary objective is to deceive victims into disclosing sensitive information such as bank details, passwords, or personal identity numbers, leading to unauthorized access and financial theft.

13. (C) Identity theft
Identity theft occurs when a malicious party illegally obtains and misuses another individual's personal identifiable information without permission. Cybercriminals utilize stolen credentials, social security identifiers, or financial details to open fraudulent accounts, obtain loans, or execute unauthorized transactions under the victim's name. This cyber crime severely impacts victim credit scores, creates severe financial distress, and damages individual reputation.

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14. (D) Malicious Software
Malware is an abbreviated blanket term derived directly from the words malicious software. It encompasses any software program or code intentionally engineered to damage, exploit, compromise, or disrupt computer hardware, software systems, and network infrastructure. Common forms of malware include computer viruses, worms, Trojans, spyware, and ransomware, all operating covertly to achieve unauthorized objectives or breach digital privacy.

15. (B) I and II only
A computer virus represents a specific category of malicious software that attaches itself to existing host files or programs to replicate and spread across digital storage media. Rather than improving processing speed, viruses degrade system performance, corrupt essential files, consume memory resources, and potentially cause operating system failures. Consequently, viruses strictly act as malicious entities that impair computational efficiency.

16. (B) A worm can self-replicate and spread independently without a host program
Computer worms and viruses differ fundamentally in their operational propagation mechanisms. While a standard virus requires a

including unauthorized computer system breach, identity theft, data tampering, and electronic fraud.

34. (C) Section 66C
Section 66C of the Information Technology Act, 2000 explicitly addresses identity theft and defines criminal punishment for fraudulent identity misuse. It specifies legal consequences for anyone who fraudulently or dishonestly uses another person's electronic signature, password, or unique identification feature. Violators face imprisonment along with financial penalties under Indian cyber jurisprudence.

35. (C) 2013
The Ministry of Communication and Information Technology launched India's National Cyber Security Policy in the year 2013. The policy framework was formulated to build a resilient, secure cyberspace for citizens, businesses, and government entities. It outlines comprehensive objectives including safeguarding critical infrastructure, enhancing institutional cyber capabilities, and reducing national vulnerabilities to cyber attacks.

36. (B) Using digital platforms to harass, threaten, or intimidate an individual online
Cyberbullying involves utilizing electronic communications, social media channels, messaging applications, or online forums to intimidate, harass, embarrass, or target specific individuals. Characterized by repetitive hostile behaviors, public shaming, or distributing malicious rumors online, cyberbullying causes severe psychological harm to victims. Recognizing and mitigating online harassment remains essential for maintaining digital safety and emotional well-being.

37. (A) Computer Emergency Response Team - India
CERT-In stands for Indian Computer Emergency Response Team, operating as the national nodal agency under the Ministry of Electronics and Information Technology. It responds to national computer security incidents, analyzes vulnerability reports, issues timely cyber threat advisories, and coordinates defensive strategies across public and private sector organizations to maintain secure national cyber operations.

38. (D) To minimize data breaches resulting from human error or social engineering tactics
Cyber security awareness programs in organizations educate employees on identifying social engineering tactics, phishing emails, and malicious web links. Human error remains a prominent vulnerability in organizational security defenses. Promoting continuous security awareness equips workforce personnel to recognize digital threats, observe proper data protection standards, and significantly reduce accidental data breach incidents.

39. (A) Social Engineering
Social engineering encompasses psychological manipulation tactics used by cybercriminals to deceive individuals into divulging confidential information, granting system access, or transferring financial resources. Instead of exploiting software bugs directly, attackers exploit human trust, fear, or curiosity through pretexting, phishing, or impersonation. Maintaining skepticism and verifying communication sources counteracts these manipulative strategies effectively.

40. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Regularly updating operating systems and software applications is a critical cybersecurity practice. Software developers continuously release updates that contain essential security patches specifically designed to fix newly discovered vulnerabilities. Applying these updates closes security gaps before cybercriminals can exploit them, confirming that software updates directly provide the defensive reasoning behind routine system maintenance.

41. (C) It enables precise audience targeting and measurable campaign performance analytics
Digital marketing offers distinct analytical advantages over traditional marketing approaches by utilizing data-driven tools. Organizations can define hyper-specific target demographics based on user preferences, online behaviors, and geographic locations. Furthermore, real-time tracking metrics enable precise evaluation of conversion rates, engagement levels, and return on investment, optimizing campaign strategies dynamically and efficiently.

42. (A) Cloud computing and collaboration tools
Remote work structures depend directly on cloud computing infrastructure and digital collaboration

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sent via mobile phone, significantly reducing unauthorized access risks.

25. (D) IV only
Firewalls act as network defense barriers that monitor, filter, and control inbound and outbound network traffic based on predefined security rules. They exist as software applications, hardware appliances, or combination systems. Firewalls operate strictly at network and software levels and cannot repair physical hardware damage, rendering statements regarding physical repair factually incorrect in network security principles.

26. (D) One Time Password
An OTP stands for One Time Password, which is an automatically generated numeric or alphanumeric string of characters used for single authentication sessions. Distributed via SMS, email, or security tokens, an OTP validly expires after a brief period, providing an additional layer of protection beyond standard static passwords during digital financial transactions and account logins.

27. (C) To detect, prevent, and remove malicious software from computer systems
Antivirus software is a critical utility program engineered to safeguard computer systems against malicious threats. It continuously scans storage drives, system memory, and incoming downloaded files for known malware signatures or suspicious heuristic behaviors. Upon identifying potential hazards, the software isolates, neutralizes, or deletes infected entities, protecting user data integrity and maintaining secure operating system functionality.

28. (A) Verifying that websites use HTTPS before sharing sensitive credentials
Safe web browsing requires adopting defensive online habits to preserve personal data privacy. Confirming that a website uses Hypertext Transfer Protocol Secure before submitting sensitive login credentials ensures data is encrypted during transmission. Avoiding suspicious links, ignoring pop-ups, and refraining from storing personal credentials on public computers further reduces vulnerability to digital intercept attacks.

29. (D) It allows unencrypted data to be intercepted by unauthorized third parties
Public Wi-Fi networks often lack essential encryption standards, making them insecure for sensitive communications. Cybercriminals on the same network can exploit unencrypted channels using packet sniffing tools to intercept transmitted data, including passwords, personal messages, and financial details. Protecting session security on public networks requires utilizing Virtual Private Networks to construct encrypted communication channels.

30. (A) Connect to internet, launch VPN application, select server and connect, browse safely
Establishing a secure encrypted network tunnel requires connecting to an available internet connection first. Once online connectivity is active, launching the Virtual Private Network application allows the user to select an authentication server and establish an encrypted session. Browsing sensitive web platforms should occur only after the VPN tunnel successfully encrypts incoming and outgoing network communications.

31. (D) The control individuals exercise over the collection and utilization of their personal data
Data privacy centers on an individual's fundamental right to govern how their personal identifiable information is gathered, processed, shared, and stored by organizations. It encompasses legal frameworks, policy consents, and technical mechanisms that protect user autonomy over private records. Maintaining strong data privacy safeguards user identity, prevents unauthorized commercial exploitation, and minimizes exposure to financial fraud.

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32. (B) www.cybercrime.gov.in
The Government of India manages www.cybercrime.gov.in as the official National Cyber Crime Reporting Portal. Operated under the Ministry of Home Affairs, this centralized portal allows victims and citizens to report various online crimes, specifically focusing on financial fraud and cyber offenses targeting women and children. It coordinates investigations seamlessly with state law enforcement agencies.

33. (A) Information Technology Act, 2000
The Information Technology Act, 2000 serves as the primary legislation governing electronic governance, digital transactions, and cyber crime prevention in India. It provides legal validity for electronic records, digital signatures, and online contracts. Additionally, the statute defines legislative penalties for illegal digital activities

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

131. Which of the following best defines an 'Algorithm' in the context of coding and problem-solving?
(A) The physical central processing unit hardware microchip installed inside a computer
(B) A step-by-step procedure designed to solve a problem
(C) A specialized category of self-replicating malicious software code or computer virus
(D) The protective external metal or plastic outer enclosure of a desktop computer cabinet

132. What is the full form of AI, a prominent technology in 21st-century future skills?
(A) Automated Interface
(B) Artificial Intelligence
(C) Applied Internet
(D) Advanced Integration

133. Which of the following is NOT a recommended precaution when using a shared or public computer?
(A) Always explicitly logging out of all active web applications and online user accounts upon finishing a session
(B) Operating the web browser exclusively within private or incognito browsing mode to avoid saving local cookies
(C) Refraining from accessing confidential personal banking records or sensitive financial information on the device
(D) Checking the 'Remember password' option for fast login

134. What is the primary focus of 'Digital Marketing'?
(A) Promoting brands and products using online digital channels
(B) Managing commercial operations for selling physical computer hardware devices in a retail shop environment
(C) Designing, programming, and developing custom desktop or mobile device operating systems from scratch
(D) Operating specialized commercial photo printing machinery to process high-resolution digital photographs

135. Consider the following steps of data processing in Data Analytics:
I. Data Collection
II. Data Cleaning
III. Data Analysis
IV. Data Visualization
Which of the following options represents the correct sequential order of these steps?
(A) IV, I, III, II
(B) I, II, III, IV
(C) II, I, IV, III
(D) III, IV, II, I

136. What is the primary difference between HTTP and HTTPS?
(A) HTTP handles plain textual data transfers, whereas HTTPS is engineered exclusively to transmit image and media files
(B) HTTPS encrypts data in transit, whereas HTTP uses plain text
(C) HTTP operates with lower network latency, rendering it significantly faster during web browsing sessions than HTTPS
(D) HTTPS protocols are restricted by web standards and can only be implemented on mobile smartphone devices

137. Which of the following is a common technique used by attackers to guess passwords?
(A) Brute Force
(B) Defragmentation
(C) System Formatting
(D) Ping Sweep

138. If a user is a victim of cyber fraud in Uttar Pradesh, where should they primarily report it for immediate action?
(A) To the regional public administrative office of the local electricity distribution board
(B) To the administrative office or grievance department of the city municipal corporation
(C) To the technical customer support center operated by their local internet service provider
(D) To the National Cyber Crime Portal or 1930 helpline

139. Which of the following tools is an example of an online remote learning platform developed under a government initiative?
(A) Netflix
(B) SWAYAM
(C) Amazon Prime
(D) WhatsApp

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applications to maintain seamless business operations. Cloud services provide decentralized, secure access to corporate databases, document repositories, and applications from any location. Simultaneously, online communication software enables continuous team coordination, video conferencing, and real-time document editing, overcoming traditional physical office limitations.

43. (D) Offline desktop word processor
Digital collaboration tools are networked software applications designed to enable multiple users to communicate, share data, and work together concurrently over the internet. Examples include team messaging applications, cloud suites, and video conferencing platforms. Conversely, an offline word processor operates locally without internet connectivity or real-time collaborative capability, preventing shared project interaction.

44. (B) To transmit one's screen display to meeting participants over a network
Screen sharing is a functional feature integrated into remote collaboration and video conferencing software that streams a user's computer or mobile display in real-time to other participants across a network. It facilitates visual presentation of documents, software demonstrations, slide shows, and collaborative problem-solving during virtual remote meetings, enhancing virtual communication.

45. (B) I and II only
Online learning platforms leverage internet connectivity to deliver instructional videos, digital readings, and online assignments to students remotely from any geographic location. These virtual systems provide flexible, self-paced access to educational content without requiring physical classroom attendance, making mandatory daily physical classroom presence contradictory to the fundamental concept of e-learning.

46. (B) Learning Management System
LMS stands for Learning Management System, which refers to a specialized software application or web platform designed to plan, implement, deliver, and assess educational courses. LMS platforms host learning materials, facilitate student-instructor communication, streamline assignment collection, and automate grade tracking, serving as primary infrastructure for academic institutions and corporate training programs.

47. (C) UMANG
UMANG, which stands for Unified Mobile Application for New-age Governance, is a major initiative by the Government of India providing a single platform for accessing pan-India e-governance services. It consolidates diverse services from central, state, and municipal bodies, including utility payments, pension services, and official document access into one unified mobile interface.

48. (A) To train youth in market-relevant skills for better employability
The Skill India Mission is a flagship national initiative aimed at empowering Indian youth through market-aligned vocational training and skill development programs. By bridging industry skill gaps, updating technical capabilities, and providing official certifications, the mission enhances youth employability and fosters sustainable wage employment and entrepreneurship opportunities across primary industrial sectors.

49. (B) Data Analytics
Data Analytics involves analyzing raw datasets using statistical tools, specialized software, and algorithms to uncover hidden patterns, market trends, and meaningful operational insights. This structured approach transforms unstructured data into actionable intelligence, enabling organizational leaders to optimize business processes, make informed strategic decisions, and improve operational performance across diverse domains.

50. (A) P-2, Q-1, R-4, S-3
Different modern technological skills correlate directly with distinct digital applications. Software coding creates executable program logic for applications. Data analytics processes transactional datasets to identify customer behavior trends. Digital marketing manages targeted online promotional ad campaigns. Digital collaboration tools facilitate interactive remote video meetings, confirming the accurate mapping of competencies.

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51. (D) Mark the email as spam/phishing and delete it immediately
Unsolicited messages announcing unexpected lottery prizes are classic phishing scams engineered to extract sensitive banking credentials and personal funds. Replying, calling embedded phone numbers, or sharing financial information compromises account security. The proper safe procedure involves marking such fraudulent communications as spam or phishing and immediately deleting them without interacting with links.

52. (A) Voice phishing using phone calls to extract sensitive data
Vishing, or voice phishing, is a social engineering attack that uses phone conversations to deceive individuals into disclosing confidential information. Perpetrators often impersonate trusted entities, such as bank officials or government representatives, using deceptive tactics to manipulate victims into revealing account numbers, dynamic passcodes, or personal credentials for illicit gain.

53. (C) Deceiving an individual into transferring funds via fake UPI payment requests
Cyber fraud involves using online services or digital platforms to dishonestly deceive individuals for unlawful financial gain. A common example includes issuing misleading Unified Payments Interface payment collect requests disguised as credit receipts. Unwittingly approving these deceptive transactions transfers money directly to fraudsters, representing a prevalent form of digital financial crime.

54. (A) Hypertext Transfer Protocol Secure
HTTPS stands for Hypertext Transfer Protocol Secure, which serves as the primary protocol for secure communication across the internet. It incorporates Transport Layer Security or Secure Sockets Layer encryption protocols to protect transmitted data between web browsers and servers, preventing unauthorized interception, tampering, or data eavesdropping during web sessions.

55. (B) I, II, and IV
Robust password security policies mandate excluding predictable personal identifiers like phone numbers and adopting lengths exceeding eight to twelve characters. Furthermore, updating passwords periodically strengthens account safety. Conversely, reusing the same password across multiple online platforms creates significant risk, as a single compromised account compromises all associated web services.

56. (D) Communication between the browser and website is encrypted
A padlock icon displayed in a browser address bar confirms that the active web session uses HTTPS encryption. This security protocol encrypts data exchanged between the user's web browser and the destination web server, preventing unauthorized third parties from intercepting or viewing sensitive details, such as passwords and financial data.

57. (A) Fingerprint scanner
Biometric authentication relies on unique biological attributes, such as physical fingerprint patterns, iris signatures, or facial geometry, to verify individual identity. Smartphone fingerprint scanners provide a secure biometric layer for multi-factor authentication, ensuring that login verification requires physical presence alongside knowledge-based inputs like numerical personal identification passcodes.

58. (C) The file is isolated safely to prevent spreading infection
Quarantine is a defensive procedure performed by antivirus software when a file is identified as potentially infected or malicious. Isolating the suspicious file into a restricted, secure directory prevents its code from executing or spreading across the operating system, allowing users to safely analyze or remove the threat.

59. (D) Microsoft Excel
Firewalls, antivirus programs, and Intrusion Detection Systems represent active cybersecurity technologies designed to safeguard networks and software infrastructure from threats. In contrast, Microsoft Excel is a spreadsheet application used for business data processing, mathematical modeling, and statistical analysis, playing no functional role in digital system network security.

60. (B) 1, 3, 2, 4
A phishing identity theft attack follows a distinct logical progression. First, the attacker distributes a deceptive email containing a malicious link. Next, the user clicks the link, navigating to a spoofed login page. Subsequently, the user submits private credentials on the fake form.

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Finally, the attacker steals these credentials to access the real account.

61. (D) It prevents saving local browsing history, cookies, and site data
Incognito or private browsing modes prevent web browsers from saving session data locally, such as browsing history, web cookies, site preferences, and temporary search forms. However, this feature strictly manages local device records and does not mask IP addresses from internet service providers, block malware downloads, or bypass website paywalls.

62. (A) Using a Virtual Private Network (VPN)
Public Wi-Fi hotspots are often unencrypted and susceptible to network eavesdropping attacks by unauthorized third parties. Connecting through a Virtual Private Network establishes an encrypted tunnel between the worker's device and internal network servers, safeguarding transmitted business data from interception, packet sniffing, and unauthorized unauthorized corporate access.

63. (B) Small text files stored on a device to save user preferences
Web cookies are small text files stored locally on a user's web browser by visited websites. They retain essential state information, user site preferences, shopping cart items, and active session logins. While designed to enhance browsing convenience, managing tracking cookies is necessary to protect user privacy from extensive cross-site profiling.

64. (C) The trail of data left behind while using the internet
A digital footprint consists of the accumulated trail of data left behind by individuals during online activities. It includes active submissions like social media posts, emails, and online registrations, alongside passive data such as IP logs, browsing history, and cookies. Managing one's digital footprint is crucial for personal online privacy.

65. (D) Completely Automated Public Turing test to tell Computers and Humans Apart
CAPTCHA stands for Completely Automated Public Turing test to tell Computers and Humans Apart. It serves as a defensive challenge-response test implemented on websites to verify whether an active user is a real human being rather than an automated computer script or malicious bot, safeguarding web resources from automated spam attacks.

66. (A) To prevent automated bots from submitting web forms
The primary objective of CAPTCHA mechanisms on websites is to differentiate between human users and automated software scripts. Requiring users to solve visual puzzles or decipher distorted text blocks stops automated bots from submitting spam web forms, performing brute-force login attempts, scraping proprietary data, or exhausting web server resources.

67. (D) Logging into personal banking accounts
Logging into financial accounts over public Wi-Fi networks is strongly discouraged due to security vulnerabilities. Public wireless networks frequently lack adequate data encryption, allowing cybercriminals on the same network to intercept sensitive login credentials through packet sniffing. Essential transactions should occur over secure private connections or Virtual Private Networks.

68. (A) Encryption
Encryption is a core cryptographic process that converts plaintext information into unreadable ciphertext using mathematical algorithms and secret keys. This security mechanism ensures that even if transmitted data is intercepted across public networks, unauthorized third parties cannot read or interpret its contents without holding the corresponding decryption key.

69. (C) Google Drive
Web browsers are software applications used to locate, retrieve, and display content from the World Wide Web, with Google Chrome, Mozilla Firefox, and Microsoft Edge serving as standard examples. Conversely, Google Drive is a cloud storage service designed for storing, sharing, and synchronizing files, rather than displaying web pages.

70. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Downloading pirated software from illegal online sources presents severe cybersecurity threats. Cybercriminals frequently alter unauthorized software downloads by bundling them with disguised malicious threats such as Trojans, keyloggers, or spyware. Consequently,

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and protect digital infrastructure against unauthorized cyber breaches.

90. (A) Inform bank/block card → Report to Cyber Police/1930 → Change passwords → Monitor accounts
Responding to digital identity or financial account compromise requires immediate prioritize containment. Contacting the bank to block payment cards prevents unauthorized financial exfiltration instantly. Subsequently reporting the crime via official cyber authorities or the 1930 helpline establishes legal records. Finally, updating account passwords and monitoring statements minimizes long-term operational vulnerability.

91. (B) 2008
The Information Technology Act, 2000 underwent significant legislative amendments in 2008, coming into effect in 2009. The Information Technology (Amendment) Act, 2008 introduced critical provisions addressing emerging cyber threats, including cyber terrorism, identity theft, electronic voyeurism, data protection mandates, and corporate compliance responsibilities for sensitive personal data handling.

92. (B) It offers cloud storage and verification for digital documents
DigiLocker is a flagship initiative under the Digital India campaign providing citizens with secure cloud storage for issued digital documents. By linking directly to Aadhaar, it enables official agencies to issue and verify authentic digital certificates—such as driving licenses and academic transcripts—eliminating physical paperwork and advancing paperless governance.

93. (B) Uniform Resource Locator
URL stands for Uniform Resource Locator, serving as the standardized address used to identify specific web pages and digital assets across the World Wide Web. Inspecting a website's URL structure helps users verify site authenticity, ensuring that domain names match genuine web services rather than spoofed phishing addresses.

94. (D) Secretly looking over someone's shoulder to observe their PIN or password
Shoulder surfing is a physical social engineering technique where an unauthorized person covertly observes an individual's screen or keypad to steal confidential information. Occurring frequently in public spaces such as automated teller machines or public transit, attackers obtain sensitive PINs, passwords, or personal account numbers through direct visual observation.

95. (B) Physically destroying the drive or using data wiping software
Safely disposing of storage hard drives containing confidential information requires permanently removing data beyond recovery. Standard file deletion and disk reformatting leave underlying data recoverable using specialized forensics software. True data destruction necessitates utilizing overwrite software algorithms or physically destroying the storage drive media to prevent unauthorized access.

96. (D) A network of compromised computers controlled remotely to execute attacks
A botnet is a network of compromised computer systems infected with malicious software and controlled remotely by an attacker, known as a botmaster. Without owner awareness, these hijacked devices execute coordinated cyber attacks, such as Distributed Denial of Service attempts, mass spam distribution, or credential stuffing operations against target networks.

97. (A) Antivirus - Spreads malicious files to other networks
Antivirus programs are defensive software utilities engineered to detect, quarantine, and eliminate malware from digital devices. Describing antivirus software as an entity that spreads malicious code to other networks is completely incorrect, as its primary technological purpose is to protect system integrity and prevent malware propagation across connected networks.

98. (C) It may automatically execute and install malware on your computer system
Connecting unknown USB flash drives to a computer poses significant security risks. Cybercriminals drop infected flash drives in public locations hoping users plug them in out of curiosity. Unrecognized flash drives can automatically execute autorun scripts that install spyware, Trojans, or ransomware silently, compromising operating system integrity and personal data.

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institutions rather than IT electronic framework legislation.

80. (A) P-2, Q-1, R-4, S-3
Cybersecurity mechanisms fulfill dedicated operational roles. Virtual Private Networks create encrypted communication channels over public networks. Firewalls inspect and filter incoming and outgoing network traffic based on rules. Antivirus programs scan local systems to detect and eliminate malware. One-Time Passwords function as dynamic, temporary authentication codes, validating user access securely.

81. (B) By using parental control software and safe search filters
Protecting children online requires implementing structured digital safeguards rather than total internet restriction. Parental control software and safe search filtering tools allow guardians to restrict access to explicit web content, manage device usage time, and filter harmful web addresses, establishing a safer online environment while encouraging digital literacy.

82. (A) A company selling user contact details without consent
A data privacy violation occurs when personal identifiable information is harvested, transferred, or commercialized without explicit user consent. Commercial organizations that sell user contact lists to third parties infringe upon privacy rights, violating standard data protection regulations that mandate transparency, purpose limitation, and user authorization in data handling.

83. (C) Personal Identification Number
PIN stands for Personal Identification Number, representing a confidential numeric passcode used in secure electronic transactions. Serving as a primary authentication key for accessing debit cards, mobile devices, and online banking platforms, keeping PIN details private prevents unauthorized financial access and identity fraud across digital communication payment networks.

84. (D) A security risk originating from internal employees within the organization
An insider threat originates within an organization from current or former employees, contractors, or business partners who possess legitimate access to internal systems and sensitive data. Whether caused by intentional malice, data theft, or accidental policy neglect, insider threats pose significant cybersecurity risks because internal users bypass external boundary firewalls.

85. (A) I, II, and III
Positive organizational security habits include conducting regular phishing simulations, enforcing periodic password rotation, and limiting data access to authorized roles on a need-to-know basis. Disabling firewalls compromises network perimeters, leaving organizational systems exposed to malicious traffic, making firewall removal inconsistent with sound cybersecurity defense practices.

86. (A) Click on 'Unsubscribe' links in suspicious spam emails
Clicking unsubscribe links inside untrusted spam emails is unsafe because cybercriminals use these links to confirm that an email address is active, or to redirect users to malicious websites. Safe security practices require marking suspicious emails as spam, maintaining updated software, and enabling multi-factor authentication on critical accounts.

87. (B) Malware that displays unwanted online advertisements
Adware is a form of software that automatically displays or downloads unwanted promotional advertisements, banners, or pop-ups onto a device interface. While some adware is bundled with free software legally, malicious adware tracks user browsing history secretly, degrades system performance, and redirects traffic to unsafe external commercial web pages.

88. (C) Pharming
Pharming is an advanced cyber attack that redirects internet traffic from a legitimate website to a fraudulent clone without user knowledge. Attackers achieve this by corrupting local Domain Name System host files or poisoning DNS servers. Even if users type the correct address, they are secretly redirected to malicious sites designed to steal credentials.

89. (A) White Hat Hackers
White Hat Hackers are cybersecurity professionals who utilize their technical expertise ethically to identify software vulnerabilities, improve system defenses, and perform authorized penetration testing. Unlike malicious Black Hat Hackers, White Hat Hackers operate legally with explicit organizational consent to secure networks

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CHAPTER 17

Technological Development and Innovation

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1. What does the abbreviation AI stand for in the context of computer technology?
(A) Artificial Information
(B) Artificial Intelligence
(C) Automated Integration
(D) Advanced Internet

2. Which of the following best defines Artificial Intelligence?
(A) A physical robot performing physical labor
(B) A network of interconnected computers sharing data
(C) A high-speed internet connection
(D) A machine's ability to perform tasks that typically require human intelligence

3. Who among the following is widely recognized as the father of Artificial Intelligence?
(A) John McCarthy
(B) Charles Babbage
(C) Alan Turing
(D) Tim Berners-Lee

4. What is 'Narrow AI' (Weak AI)?
(A) AI that can perform any intellectual task that a human can do
(B) AI that operates without any power supply
(C) AI that is designed and trained for a single, specific task
(D) AI that has self-awareness and human emotions

5. Which of the following is an everyday example of Narrow AI?
(A) A spam email filter
(B) A robot that can think and act exactly like a human being
(C) A time-travel machine
(D) A mechanical wristwatch

6. What does 'General AI' (Strong AI) refer to?
(A) AI designed strictly for executing predefined, fixed rules in games like chess
(B) AI engineered exclusively for sorting and organizing routine incoming emails
(C) AI reliant entirely on continuous manual data entry for basic operational tasks
(D) AI capable of learning, reasoning, and applying intelligence across diverse domains

7. The recommendation system used by Netflix to suggest movies is an application of which technology?
(A) Virtual Reality
(B) Artificial Intelligence
(C) Blockchain
(D) 3D Printing

8. Which of the following is NOT an application of Artificial Intelligence in daily life?
(A) Voice assistants like Alexa
(B) Google Maps route optimization
(C) Traditional mechanical typewriters
(D) Facial recognition on smartphones

9. Machine Learning is fundamentally considered to be a subfield of which broader technology?
(A) Cloud Computing
(B) Internet of Things
(C) Computer Networking
(D) Artificial Intelligence

10. Which statement best defines Machine Learning?
(A) Using algorithms to analyze data, learn patterns, and make informed predictions
(B) Writing explicit line-by-line computer code for every possible operational scenario
(C) Assembling and configuring physical computer hardware components in a workstation
(D) Deleting temporary system files and clearing caches to boost computer performance

11. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Machine Learning allows a system to improve its performance on a specific task over time.

99. (D) A retina scan
Biometric security systems authenticate user identity by measuring unique biological characteristics. A retina scan analyzes the unique blood vessel patterns located at the back of the human eye. Because biological traits cannot be easily forged or shared like alphanumeric passwords or smart cards, biometrics provides advanced, reliable access control verification.

100. (D) Assertion (A) is false but Reason (R) is true.
Conducting financial transactions on public computers in cyber cafes presents severe cybersecurity risks due to potential keyloggers, unpatched operating systems, and public network monitoring. While public computers may utilize standard firewalls to filter network traffic, firewalls do not block local credential theft software, making public computer online banking highly insecure.

101. (B) Multi-Factor Authentication
Multi-Factor Authentication requires users to supply two or more distinct verification factors before accessing system resources. These factors typically combine knowledge inputs like passwords, possession tokens like dynamic passcodes, and biological traits like fingerprint scans. Implementing multiple independent security layers ensures accounts remain protected even if single passwords become compromised.

102. (D) It creates an encrypted tunnel for data over a public network
A Virtual Private Network creates a secure, encrypted communication tunnel between a user's local device and a remote server across public networks. Encrypting data in transit hides online activities, masks IP addresses, and prevents unauthorized network entities from intercepting confidential communications, ensuring enhanced data privacy and operational security.

103. (A) Immediately change your account password to prevent unauthorized access
Receiving an unsolicited One-Time Password indicates that an unauthorized party possesses your static login credentials and is attempting to access your account. Immediately updating the account password stops the unauthorized login attempt, neutralizes the compromised static credentials, and restores account security before perpetrators bypass additional verification controls.

104. (B) Obscuring specific sensitive data fields within a database
Data masking is a cybersecurity technique that obscures original sensitive data fields within database environments by replacing real characters with proxy characters or sanitized values. Used during software testing and training, data masking maintains functional data structures while ensuring confidential personal, financial, or healthcare information remains unexposed to unauthorized personnel.

105. (A) I and II only
Maintaining email security requires avoiding file attachments from unverified senders and carefully inspecting technical sender domain addresses rather than relying on displayed names. Replying directly to spammers to unsubscribe is unsafe, as it confirms that an email account is active, prompting increased spam volume or targeted phishing attempts.

106. (C) Article 21
In the landmark 2017 Justice K.S. Puttaswamy verdict, the Supreme Court of India unanimously affirmed that the Right to Privacy is a fundamental right guaranteed under Article 21 of the Constitution. Article 21 protects personal liberty and life, forming the constitutional bedrock for informational privacy and national data protection standards.

107. (D) Git / GitHub
Git and GitHub represent distributed version control systems and cloud hosting services designed for software collaboration. They enable software development teams to track code modifications, manage concurrent programming branches, review revisions, and collaboratively merge software code across remote geographic locations efficiently while preserving code history and system integrity.

108. (A) Purchasing a licensed software online
Cyber crime involves unlawful digital activities targeting computer networks or using technology to execute illegal acts, such as hacking, piracy, and cyberstalking. Purchasing legitimate licensed software online through authorized platforms is a legal commercial transaction that respects

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intellectual property rights, representing safe e-commerce rather than a cyber crime.

109. (B) A software update designed to fix system bugs or security vulnerabilities
A patch is a targeted software update distributed by developers to fix programming bugs, resolve operational errors, or address security vulnerabilities within applications and operating systems. Promptly applying software patches prevents cybercriminals from exploiting known security flaws, maintaining overall system stability, data integrity, and software protection against emerging threats.

110. (A) P-2, Q-4, R-1, S-3
India's digital initiatives fulfill distinct public objectives. UMANG provides a unified mobile portal for e-governance services. DigiLocker offers cloud-based document storage and verification. SWAYAM hosts online educational courses across academic disciplines. The CyberCrime Portal provides citizens with a centralized reporting mechanism to log cyber offenses directly to law enforcement.

111. (C) Spoofing
Spoofing describes cyber tactics where attackers disguise communication origins to masquerade as trusted entities. Website spoofing involves fabricating false web pages mimicking legitimate domain layouts. Unwitting users arriving at spoofed sites submit personal credentials or financial details, enabling perpetrators to intercept confidential data and conduct unauthorized digital financial fraud.

112. (B) Illegally capturing data from a credit card magnetic strip during a transaction
Credit card skimming is a fraudulent technique involving unauthorized physical or electronic hardware devices installed on payment terminals or automated teller machines. These skimming devices covertly read and copy sensitive account information encoded on a card's magnetic strip during legitimate transactions, enabling fraudsters to clone payment cards illegally.

113. (D) To build a secure cyberspace for citizens, businesses, and the government
The primary strategic goal of India's National Cyber Security Policy 2013 is to build a safe, secure, and resilient cyberspace for citizens, private businesses, and government entities. It seeks to protect critical infrastructure, enhance national cyber defense capabilities, prevent online fraud, and minimize digital system vulnerabilities through collaborative policy controls.

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114. (A) Restricting privacy settings so only verified contacts view posts
Protecting personal information on social media platforms relies on properly configuring profile privacy settings. Restricting post access exclusively to trusted, verified connections limits exposure of personal details to public scrutiny. Avoiding public broadcasts of location data, work schedules, and contact details reduces vulnerabilities associated with identity theft and cyberstalking.

115. (C) I, II, and IV
Basic digital literacy involves using web search engines efficiently, evaluating online information sources critically, and observing practical privacy controls. Writing complex low-level assembly code represents specialized computer science programming rather than basic digital literacy skills required for standard everyday digital participation across academic, personal, and professional modern environments.

116. (D) Worm
A computer worm is a distinct category of self-replicating malware capable of propagating across network infrastructure without human intervention or host application reliance. Worms exploit operating system security flaws to spread autonomously to other connected computing devices, rapidly exhausting network bandwidth and compromising digital storage infrastructure across organizations.

117. (B) Unauthorized access to or disclosure of confidential data
A data breach occurs when unauthorized individuals gain illegal access to confidential, protected, or sensitive data within organizational storage systems. Data breaches often expose personal records, trade secrets, and financial details, leading to major privacy violations, operational disruptions, severe financial losses, and legal liabilities for affected enterprise entities.

118. (A) tY#7!qP9z$L
Password strength against brute-force attacks depends on character randomness and structural complexity. A password comprising an

unpredictable mix of uppercase letters, lowercase letters, numeric digits, and special characters offers high character entropy. Excluding predictable dictionary words or personal dates significantly increases computational resistance against automated password cracking tools.

119. (B) It evaluates employee vigilance using simulated fake phishing emails
A phishing simulation test represents a proactive cybersecurity training exercise where organizations send benign fake phishing emails to employees. This operational assessment evaluates employee security awareness, measures workforce susceptibility to social engineering tactics, and identifies specific areas needing educational reinforcement, thereby strengthening human defenses against real cyber attacks.

120. (C) Total elimination of any requirement for an active internet connection
E-learning provides distinct benefits, including flexible learning schedules, broad course selections, and personalized learning speeds. However, accessing online educational platforms, video lectures, and digital course materials fundamentally requires stable internet connectivity. Claiming that e-learning completely eliminates internet requirements is false, as online connectivity remains necessary for distance learning platforms.

121. (C) Virtual Private Network
VPN stands for Virtual Private Network, which establishes a secure, encrypted connection over public network channels like the internet. By routing network traffic through encrypted tunnels, a Virtual Private Network safeguards user privacy, hides real IP addresses, and prevents unauthorized third parties from intercepting transmitted sensitive data during web sessions.

122. (B) A cryptographic technique verifying document authenticity
A digital signature is a mathematical cryptographic mechanism used to validate the authenticity, integrity, and origin of digital documents or electronic messages. Far beyond a simple scanned image of handwritten ink, digital signatures utilize public key infrastructure to ensure that sent documents remain untampered with and legally binding.

123. (A) Violation of individual privacy through unauthorized image capture
Section 66E of the Information Technology Act, 2000 explicitly criminalizes privacy violations involving unauthorized image capture or transmission. It prescribes penal consequences for intentionally capturing, publishing, or transmitting images of private body parts without consent, establishing strict legal protections against voyeurism and non-consensual digital photography within Indian jurisdiction.

124. (D) Ability to process, clean, and analyze raw data effectively
Data analytics focuses on extracting meaningful insights from complex datasets to drive strategic decisions. Essential technical competencies include systematically gathering raw data, cleaning missing or inconsistent entries, performing quantitative analysis, and interpreting visual patterns. These computational data skills enable professionals to identify trends and solve organizational problems effectively.

125. (B) I, II, and IV
Securing wireless networks requires implementing strong encryption standards like WPA2 or WPA3, changing default administrative router credentials, and disabling automatic Wi-Fi connection features in public venues. Public Wi-Fi networks generally lack adequate encryption, making unencrypted public hotspots vulnerable to data interception and unauthorized packet sniffing by malicious entities.

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126. (B) Using electronic means to repeatedly harass a specific individual
Cyber stalking involves using digital communication tools, social networking platforms, or electronic messaging systems to monitor, harass, threaten, or intimidate a specific target repeatedly. Cyber stalking causes significant emotional distress, infringes upon personal digital privacy, and represents a serious online crime subject to strict legal prosecution under technology statutes.

127. (D) Receiving credit card billing statements for unapproved accounts
Receiving unexpected financial statements or credit card bills for accounts you never opened is a clear indication of identity theft. Perpetrators use stolen personal details to apply for loans or lines of credit illegally. Promptly reviewing

credit records and reporting fraudulent accounts mitigates financial damage and restores credit integrity.

128. (A) Only the communicating users can read the encrypted content
End-to-End Encryption ensures that message contents are encrypted on the sender's device and decrypted only on the recipient's target device. This cryptographic design prevents intermediate parties—including network service providers, internet hackers, and the messaging platform service providers themselves—from accessing or reading private conversation content during data transit.

129. (C) Parental Control Software
Parental control software is specifically engineered to help guardians supervise and restrict children's digital activities. These specialized application tools enable content filtering, web domain blocking, safe search enforcement, and usage monitoring, effectively shielding minors from exposing themselves to adult content, harmful web platforms, and online safety risks.

130. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Locking computer workstations when stepping away from desks is a essential workplace security policy. Unattended, unlocked computers leave sensitive corporate databases, private communications, and internal networks open to unauthorized physical access by passerby. Ensuring workstation lock screens are active directly prevents physical security breaches and protects organizational confidentiality.

131. (B) A step-by-step procedure designed to solve a problem
An algorithm is a well-defined, step-by-step mathematical or logical procedure designed to perform specific calculations or solve complex computational problems. Serving as the fundamental foundation of software engineering and computer programming, algorithms process input data systematically through ordered rules to produce accurate, reliable outputs across various digital applications.

132. (B) Artificial Intelligence
AI stands for Artificial Intelligence, a major domain of computer science dedicated to building smart systems capable of performing tasks that traditionally require human cognition. These capabilities include machine learning, natural language processing, visual perception, and automated problem-solving, driving technological innovation and digital transformation across contemporary global industries.

133. (D) Checking the 'Remember password' option for fast login
Selecting the remember password feature on public or shared computers stores private account credentials in local browser storage, granting subsequent users unauthorized access to personal accounts. Safe public computing requires using private browsing windows, refraining from accessing financial accounts, and explicitly logging out of all active web sessions.

134. (A) Promoting brands and products using online digital channels
Digital marketing focuses on promoting products, services, and corporate brands through internet channels and electronic devices. It utilizes diverse strategies, including search engine optimization, social media marketing, targeted email campaigns, and content creation, enabling organizations to reach broad target demographics, analyze user engagement, and optimize marketing campaigns.

135. (B) I, II, III, IV
Data analytics follows a structured operational sequence to extract meaningful business insights. The process begins with systematic data collection, followed by data cleaning to fix errors and inconsistencies. Next, quantitative data analysis identifies meaningful correlations, and finally, data visualization presents analytical insights through intuitive charts for organizational decision-making.

136. (B) HTTPS encrypts data in transit, whereas HTTP uses plain text
The primary operational distinction between HTTP and HTTPS lies in data transmission security. Standard HTTP transmits network data in plain text, rendering communications vulnerable to network interception. Conversely, HTTPS incorporates cryptographic encryption via Transport Layer Security, shielding data in transit from eavesdropping, tampering, and unauthorized data extraction across public networks.

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137. (A) Brute Force
A brute-force attack is a trial-and-error password cracking method where automated software systematically submits every possible combination of characters until discovering the correct passcode. Attackers deploy brute-force methods to breach user accounts, highlighting the necessity of complex passwords and account lockout mechanisms to mitigate automated credential guessing.

138. (D) To the National Cyber Crime Portal or 1930 helpline
Victims of cyber fraud anywhere in India, including Uttar Pradesh, should report offenses through the National Cyber Crime Reporting Portal or the 1930 national helpline. Managed by law enforcement, these centralized channels initiate immediate cybercrime investigations, coordinate with financial institutions to block fraudulent transactions, and secure legal restitution.

139. (B) SWAYAM
SWAYAM is an online learning platform developed by the Government of India to provide quality educational courses to students across the nation. Hosting interactive video lectures, reading materials, and assessments from secondary to post-graduate levels, SWAYAM expands educational access, bridging the digital divide for learners across remote geographic regions.

140. (A) P-2, Q-4, R-1, S-3
Cybersecurity concepts match specific practical examples across technical systems. User authentication is demonstrated by unlocking mobile devices using biometric fingerprints. Data privacy involves preventing commercial platforms from sharing user contact lists without consent. Social engineering includes tricking individuals via deceptive phone calls, while Trojans represent classic examples of malware.

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downloading unauthorized software exposes devices to data theft and system corruption, explaining why using pirated downloads is hazardous.

71. (B) A unpatched software security flaw unknown to the vendor
A zero-day vulnerability refers to a security flaw in software that is unknown to the software developer or vendor. Because no official patch exists, cybercriminals can exploit this security vulnerability to launch malicious attacks, leaving systems unprotected until developers discover the software flaw and publish an official remediation update.

72. (C) Unexpected pop-ups, frequent crashes, and slow performance
Malware infections typically trigger noticeable operational degradation within computer systems. Common indicators include unexpected pop-up advertisements, unexplained system slowdowns, frequent software crashes, unauthorized browser redirection, and unprompted background disk activity. These symptoms occur because hidden malicious processes consume system memory, compute power, and network bandwidth continuously.

73. (A) Phishing conducted via SMS text messages
Smishing combines SMS text messaging with phishing techniques to execute digital fraud. Attackers send deceptive cellular text messages containing urgent alerts, fake delivery notifications, or financial prompts accompanied by malicious web links. Unwittingly clicking these links or disclosing credentials exposes users to identity theft, financial fraud, or unauthorized malware installations.

74. (D) Disconnect from the internet immediately and run a malware scan
Accidentally clicking a malicious link requires immediate defensive action to prevent active payload delivery or remote data exfiltration. Disconnecting the device from local Wi-Fi or network connections halts ongoing communications with malicious servers. Subsequently running a comprehensive malware scan with updated security software isolates and removes potential system threats.

75. (B) II only
Utilizing a reputable password manager is an effective strategy for generating and securely storing complex, unique passwords across accounts. Writing passcodes on physical notes exposes credentials to unauthorized physical observation, while sharing passwords compromises account defense. Thus, relying on an encrypted password manager represents the only safe password management habit.

76. (B) It records user keystrokes to steal passwords and private data
A keylogger is a specialized surveillance tool, existing as software or hardware, that covertly logs every keystroke typed on a target computer keyboard. Cybercriminals deploy keyloggers silently to record sensitive personal data, such as usernames, passwords, credit card numbers, and private communications, before transmitting them to unauthorized remote entities.

77. (B) Denial of Service attack
A Denial of Service attack targets web servers and network systems by flooding them with massive volumes of superfluous traffic or malicious requests. This overwhelming volume consumes processing capabilities and bandwidth, preventing legitimate users from accessing targeted websites or network services, thereby temporarily disrupting standard digital organizational operations.

78. (C) 1930
In India, 1930 operates as the designated national toll-free helpline number for reporting financial cyber fraud promptly. Managed under the Citizen Financial Cyber Fraud Reporting and Management System, this helpline enables victims to report unauthorized financial transactions immediately, facilitating rapid coordination with banks to freeze stolen funds before fraudsters withdraw them.

79. (D) It makes the use of cash transactions illegal in India
The Information Technology Act, 2000 provides legal recognition for electronic documents, digital signatures, and e-commerce transactions, while prescribing penalties for digital crimes. However, it does not outlaw cash usage within India, as cash regulations fall under separate monetary policies governed by statutory financial

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Reason (R): Machine Learning algorithms learn from past data and experiences without being explicitly reprogrammed.
Choose the correct option:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

12. In the context of Machine Learning, what is 'Supervised Learning'?
(A) Learning where the model is given unorganized data with no labels
(B) Learning where the model is trained on a labeled dataset
(C) A process where humans physically build the machine
(D) Learning that requires no data whatsoever

13. Which type of Machine Learning algorithm looks for hidden patterns in an unlabeled dataset?
(A) Unsupervised Learning
(B) Supervised Learning
(C) Reinforced Hardware Learning
(D) Manual Learning

14. What is 'Deep Learning' primarily based on?
(A) Multidimensional relational database management tables
(B) Elementary binary logic circuits and arithmetic gates
(C) Artificial Neural Networks configured with multiple layers
(D) Read-Only Memory architecture and hardware registers

15. Consider the following statements regarding the relationship between AI, ML, and Deep Learning:
I. Artificial Intelligence is the broadest concept among the three.
II. Machine Learning is a subset of Deep Learning.
III. Deep Learning is a subset of Machine Learning.
Which of the statements given above is/are correct?
(A) I only
(B) I and II only
(C) I and III only
(D) I, II, and III

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16. What is the fundamental difference between standard Machine Learning and Deep Learning?
(A) Machine Learning depends continuously on cloud connectivity, whereas Deep Learning functions entirely offline without network access
(B) Machine Learning is designed exclusively for physical hardware tasks, whereas Deep Learning operates strictly within software systems
(C) Deep Learning relies on multi-layered artificial neural networks, whereas standard Machine Learning utilizes simpler statistical models
(D) Deep Learning consumes significantly fewer hardware processing resources than traditional statistical Machine Learning models

17. The architecture of an Artificial Neural Network is primarily inspired by which of the following?
(A) The physical structure and orbital mechanics of the solar system
(B) The biological network of the human brain and nervous system
(C) The intricate geometric pattern and architecture of a spider's web
(D) The hierarchical arrangement of a standard tree data structure

18. Consider the following statements about Artificial Neural Networks:
I. They consist of an input layer, hidden layers, and an output layer.
II. They are entirely incapable of processing image data.
III. The nodes in the network are often referred to as artificial neurons.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

19. What term is used for the layers present between the input layer and the output layer in a Deep Learning neural network?
(A) Hidden Layers
(B) Transparent Layers
(C) Blank Layers
(D) Core Layers

I. The widespread use of facial recognition raises mass surveillance and privacy concerns.
II. AI systems can inadvertently discriminate against minority groups if training data is biased.
III. Emerging technologies completely eliminate all forms of cyber crime.

Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

76. What is a 'Deepfake'?
(A) A complex, multi-tiered directory and nested folder hierarchy within a computer operating system
(B) Synthetic media replacing an individual's likeness in images or video using AI algorithms
(C) A cryptographic algorithm engineered to establish highly secure communication channels
(D) A critical system kernel error causing a workstation to crash and reboot permanently

77. Which term describes a computer program that operates autonomously over the internet to perform repetitive tasks, sometimes maliciously?
(A) Bot
(B) Spreadsheet
(C) Macro
(D) Compiler

78. Which of the following best describes 'Edge Computing' in relation to IoT?
(A) Positioning physical workstation hardware units directly along the perimeter edge of an office desk
(B) Executing computational tasks exclusively during periods when network or internet connections drop
(C) Processing data on local devices or edge servers rather than transmitting it to distant clouds
(D) Performing complex computational operations exclusively on handheld mobile smartphone hardware

79. What is the main advantage of Edge Computing over Traditional Cloud Computing for IoT devices?
(A) It provides virtually unlimited data storage capacity on connected local hardware
(B) It completely removes the requirement for electrical power during operations
(C) It alters hardware manufacturing to make physical devices significantly lighter
(D) It lowers latency and bandwidth consumption by processing data close to the source

80. Match the following terms in List I with their fundamental definitions in List II:
List I: Terms
P. Data Mining
Q. Machine Learning
R. Cloud Computing
S. Internet of Things
List II: Definitions
1. Network of connected physical devices
2. Extracting usable patterns from large data sets
3. Systems learning from data without explicit programming
4. Delivery of computing services over the internet
(A) P-2, Q-3, R-4, S-1
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

81. In artificial intelligence, what does 'NLP' stand for?
(A) Native Language Programming
(B) Natural Language Processing
(C) Network Logical Protocol
(D) Neural Logic Processing

82. Which capability allows an AI to convert typed text into a spoken human voice?
(A) Speech-to-Text (STT)
(B) Optical Character Recognition (OCR)
(C) Automated Translation
(D) Text-to-Speech (TTS)

83. The technology used by modern autonomous (self-driving) cars to detect objects and navigate is primarily a combination of:
(A) AI, IoT sensors, and Machine Learning algorithms
(B) Bluetooth connectivity and short-range Wi-Fi networks
(C) HTML document markup and CSS styling stylesheets
(D) Basic digital calculators paired with standalone GPS receivers

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IV. Reducing the processing speed of personal computers.

Which of the above statement(s) is/are correct regarding the genuine benefits or applications of Big Data?

(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, III, and IV

29. How is Big Data typically processed since it cannot fit on a single standard computer?

(A) Utilizing distributed computing frameworks across interconnected clusters of computers
(B) Printing all binary datasets on physical paper for optical scanning and manual review
(C) Compressing the entire database into a single archive file to process in a text editor
(D) Processing all incoming data streams using mechanical analog calculation machines

30. Which of the following is a correct sequence of steps in a typical Big Data processing pipeline?

(A) Data Storage → Data Collection → Data Analysis → Data Visualization
(B) Data Analysis → Data Visualization → Data Storage → Data Collection
(C) Data Collection → Data Storage → Data Analysis → Data Visualization
(D) Data Visualization → Data Analysis → Data Collection → Data Storage

31. What does the abbreviation 'IoT' stand for in modern technology?

(A) Intranet of Technology
(B) Integration of Things
(C) Information of Technology
(D) Internet of Things

32. Which of the following best defines the Internet of Things (IoT)?

(A) An isolated, offline database system engineered specifically for managing internal organizational records
(B) A specialized physical infrastructure consisting of high-speed fiber optic cables for local connections
(C) A network of physical devices with embedded sensors and software that exchange data over the internet
(D) A client-side web programming framework designed for styling static online pages and document structures

33. What is the primary role of 'sensors' in an IoT ecosystem?

(A) To visually render computational outputs and graphics to end users
(B) To gather real-time environmental data from surrounding physical spaces
(C) To supply continuous electrical voltage and power to embedded hardware
(D) To automatically generate and dispatch formatted textual notifications

34. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):

Assertion (A): IoT devices require some form of network connectivity to function properly.

Reason (R): IoT devices must transmit the data they collect to a central system or cloud for processing and analysis.

Choose the correct option:

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

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35. Which of the following devices is an example of an IoT product in a Smart Home?

(A) A smart thermostat controlling climate settings remotely via a connected mobile app
(B) A traditional non-electronic wooden chair designed for standard residential furniture
(C) A standalone battery-operated wall clock functioning without external network links
(D) A standard mechanical door lock operated entirely through manual key rotation

36. How is IoT utilized in the concept of a 'Smart City'?

(A) By phasing out digital infrastructure and substituting modern public hardware with manual mechanical tools
(B) By completely isolating municipal utilities and public service networks from internet connectivity
(C) By deploying connected sensors to optimize traffic routing, waste disposal, and municipal energy usage
(D) By imposing administrative restrictions prohibiting private citizens from connecting mobile smartphones

37. What is 'Smart Farming' in the context of IoT?

(A) An Unmanned Aerial Vehicle (UAV) integrated with automated agricultural technology
(B) An immersive Virtual Reality software application simulating flight controls
(C) A dedicated orbital satellite communications link sending weather signals
(D) A biological ecosystem relying entirely on natural organism interactions

94. What is 'Predictive Analytics'?
(A) Predicting short-term meteorological trends using solely a basic ambient thermometer
(B) Attempting unauthorized system access by generating random password character strings
(C) Analyzing historical data with machine learning to forecast probable future outcomes
(D) Recovering and restoring corrupted or deleted files from an external storage backup drive

95. The concept of 'Digital Twin' is highly relevant in modern industry. What is a Digital Twin?
(A) Procuring two identical hardware workstations to serve as redundant operational backups
(B) A malicious computer virus program that systematically duplicates files on a hard drive
(C) Configuring dual display monitors connected simultaneously to a single personal computer
(D) A virtual simulation or digital model reflecting a physical object, process, or system

96. Which among the following is a key advantage of utilizing Big Data in the retail sector?
(A) Uniformly increasing retail merchandise prices without prior market analysis
(B) Removing all physical inventory items from retail store displays and shelves
(C) Analyzing customer buying habits to deliver targeted product recommendations
(D) Discontinuing the acceptance of digital and electronic payment methodologies

97. Which of the following is considered an ethical guideline for Artificial Intelligence developers?
(A) Systematically configuring the AI model to favor specific demographic groups
(B) Guaranteeing that AI systems respect user privacy and operate transparently
(C) Concealing internal algorithmic decision-making mechanics from end users
(D) Intentionally programming AI applications to bypass data protection laws

98. Consider the following statements regarding the impact of emerging technologies on employment:
I. Automation may lead to job displacement in routine manufacturing tasks.
II. The rise of AI generates new jobs in data science and AI ethics.
III. Technological shifts require a workforce willing to undergo continuous learning.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

99. Which of the following is an example of an AI application in the financial sector?
(A) Automated fraud detection in credit card transactions
(B) Industrial printing and minting of physical currency notes
(C) Secure transportation of cash assets using armored vehicles
(D) Heavy engineering and manufacturing of steel bank vaults

100. Match the AI concept in List I with its basic meaning in List II:
List I: AI Concept
P. General AI
Q. Narrow AI
R. Machine Learning
S. Computer Vision
List II: Meaning
1. Algorithms learning from data
2. Interpreting visual information
3. Human-like intelligence across all tasks
4. Intelligence restricted to a single task
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-1, Q-2, R-3, S-4

101. What does 'RFID' stand for, a technology heavily used in IoT for tracking objects?
(A) Radio Frequency Identification
(B) Random Frequency Information
(C) Rapid Format Identification
(D) Remote File Integrated Data

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immune to ambient weather fluctuations
(C) Minimizing harvest wastage through predictive analytics on optimal harvesting windows
(D) Imposing technological restrictions that prevent agricultural workers from operating tractors

47. How is Artificial Intelligence utilized in the education sector?
(A) By fully replacing human teaching professionals across primary educational institutions
(B) By enforcing a single, standardized, rigid academic curriculum across global schools
(C) By prohibiting enrolled students from accessing any digital or networked technology devices
(D) By constructing adaptive, personalized learning pathways tailored to individual student needs

48. What is the role of automated grading systems in education?
(A) Analyzing and scoring the physical penmanship and calligraphic quality of student handwriting samples
(B) Automatically initiating administrative expulsion protocols for students who score below passing marks
(C) Evaluating standardized assessments and written answers using automated algorithms to assist educators
(D) Generating and physically printing academic report cards without requiring manual clerical data entry

49. Which of the following is NOT a common application of AI in education?
(A) Intelligent tutoring systems
(B) Physical maintenance of school buildings
(C) Automated administrative task management
(D) Plagiarism detection using NLP

50. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Virtual assistants like Siri and Alexa can understand human speech and respond appropriately.
Reason (R): They use Natural Language Processing (NLP) and Machine Learning to process and generate human language.
Choose the correct option:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

51. What is a 'Chatbot'?
(A) Software engineered to simulate human conversation via text or voice
(B) A human customer support agent answering incoming phone inquiries
(C) A specialized peripheral hardware device used for inputting text strings
(D) An interactive digital platform designed for social networking services

52. Consider the following statements about Chatbots:
I. They are available 24/7 for customer support.
II. They can handle multiple customer queries simultaneously.
III. They always require a human operator to type the response.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

53. Which technology allows a chatbot to understand the intent behind a user's text message?
(A) Natural Language Processing (NLP)
(B) Optical Character Recognition (OCR)
(C) Data Encapsulation
(D) Blockchain Ledger

54. The virtual assistant 'Alexa' is developed by which major tech company?
(A) Microsoft
(B) Apple
(C) Google
(D) Amazon

55. The virtual assistant 'Siri' is predominantly found on devices manufactured by which company?
(A) Samsung
(B) Apple
(C) IBM
(D) Amazon

56. Face-recognition technology falls under which broader category of computer security and identification?

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(A) Using IoT sensors to continuously track soil moisture, crop health, and weather conditions
(B) Practicing traditional manual agriculture relying strictly on physical labor without mechanical tools
(C) Cultivating agricultural crops exclusively inside climate-controlled computer server facilities
(D) Restricting the commercial distribution of agricultural yields to online e-commerce platforms

38. Which component in an IoT system acts on the environment based on the processed data (e.g., turning on a water valve)?
(A) Sensor
(B) Router
(C) Browser
(D) Actuator

39. Which of the following connectivity technologies is commonly used for short-range communication between IoT devices?
(A) Fiber Optic undersea cables
(B) Bluetooth
(C) Dial-up modems
(D) Satellite television networks

40. Choose the correct sequence of data flow in a standard IoT system:
(A) Sensor → Cloud Processing → Network → User Interface
(B) User Interface → Network → Sensor → Cloud Processing
(C) Sensor → Network → Cloud Processing → User Interface
(D) Cloud Processing → Sensor → User Interface → Network

41. Which AI application is widely used in the health sector to detect diseases like cancer early?
(A) Automated word processing and document editing software platforms
(B) Targeted email marketing and subscriber analytics algorithms
(C) Algorithmic AI music generation and composition software tools
(D) Diagnostic medical image analysis for scans like X-rays and MRIs

42. How does Machine Learning assist in the pharmaceutical industry?
(A) Accelerating drug discovery and development via algorithmic pattern recognition
(B) Operating industrial assembly machinery to physically compress and package pills
(C) Sanitizing, sterilizing, and maintaining physical chemistry laboratory equipment
(D) Generating and compiling official corporate financial statements and audit reports

43. The use of electronic health records (EHR) combined with AI to predict patient readmissions is an intersection of which two fields?
(A) Robotics and 3D Printing
(B) Big Data and Artificial Intelligence
(C) Virtual Reality and Blockchain
(D) Internet of Things and Quantum Computing

44. What is 'Precision Agriculture'?
(A) Applying identical amounts of water and fertilizer across fields regardless of varying soil requirements
(B) Leveraging AI, IoT, and analytics to optimize crop yields by tailored delivery of plant resources
(C) Restricting agricultural cultivation exclusively to geometrically precise and measured field boundaries
(D) Executing all field harvesting activities relying strictly on traditional hand-operated farm implements

45. Match the emerging technology in List I with its agricultural application in List II:
List I: Emerging Technology
P. Drones
Q. IoT Sensors
R. Artificial Intelligence
S. Big Data Analytics
List II: Agricultural Application
1. Analyzing historical weather patterns to predict crop yields
2. Predicting crop diseases from images of plant leaves
3. Continuously measuring soil moisture levels
4. Capturing aerial imagery of large farm fields
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1
(D) P-1, Q-2, R-3, S-4

46. Which of the following is a primary benefit of using AI in the agriculture sector?
(A) Significantly increasing the systemic dependency on synthetic chemical pesticides
(B) Rendering agricultural production entirely

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(A) SaaS (Software as a Service)
(B) PaaS (Platform as a Service)
(C) DaaS (Desktop as a Service)
(D) IaaS (Infrastructure as a Service)

67. Google Docs and Microsoft Office 365 are examples of which type of cloud service?
(A) Software as a Service (SaaS)
(B) Infrastructure as a Service (IaaS)
(C) Platform as a Service (PaaS)
(D) Hardware as a Service (HaaS)

68. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Emerging technologies like AI and automation are expected to disrupt the current employment landscape.
Reason (R): Routine and highly repetitive tasks can be performed more efficiently by automated systems, reducing the need for human labor in those specific roles.
Choose the correct option:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

69. While AI may displace some traditional jobs, what is its expected positive impact on employment?
(A) Creating new employment opportunities in AI maintenance, data science, and engineering
(B) Eliminating human labor entirely across all global industrial and service sectors
(C) Decreasing average worker wages uniformly across every economic market sector
(D) Forcing global economies to return completely to pre-industrial agrarian practices

70. What is 'Upskilling' in the context of emerging technological trends?
(A) Hardware overclocking procedures designed to increase computer processing clock speeds
(B) Relocating commercial business operations to an upper floor within an office building
(C) Executing a standard software application upgrade from version 1.0 to version 2.0
(D) Educating workers in modern skills to adapt to roles working alongside automated systems

71. One major ethical challenge associated with AI and Big Data is 'Data Privacy'. What does this refer to?
(A) The policy requirement mandating that all personal demographic data be made publicly accessible
(B) The entitlement of individuals to control the collection, sharing, and use of personal data
(C) The permanent encryption of stored user data preventing even authorized owners from accessing it
(D) The physical practice of angling workstation computer monitors away from nearby office coworkers

72. What does 'Algorithmic Bias' mean in Artificial Intelligence?
(A) Performance variances where AI systems run significantly faster on specific computer hardware setups
(B) Software developers demonstrating a strong professional preference for a specific programming language
(C) AI algorithms producing unfair outcomes due to historical biases present within their training datasets
(D) System errors resulting in AI applications refusing to process or store negative numeric data entries

73. If an AI recruiting tool consistently rejects female candidates because it was trained on historical data favoring male candidates, this is an example of:
(A) Data Encapsulation
(B) Machine Unlearning
(C) Strong AI
(D) Algorithmic Bias

74. Why is transparency or 'Explainable AI' considered important ethically?
(A) Enabling users to comprehend the logic behind an AI model's specific output
(B) Allowing external network hackers to effortlessly bypass enterprise security firewalls
(C) Guaranteeing that source code is made entirely open-source and distributed without cost
(D) Improving graphical design elements to make software interfaces visually appealing

75. Consider the following statements regarding the ethical challenges of emerging technologies:

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20. Which technology is best suited to automatically recognize objects, faces, and spoken words with high accuracy?
(A) Simple Excel Macros
(B) HTML scripting
(C) Deep Learning
(D) Basic Network Routing

21. What does the term 'Big Data' refer to?
(A) Extremely large and complex data sets that exceed the processing capacity of traditional software tools
(B) High-resolution physical monitor display units designed specifically for displaying large visual graphics
(C) Computer files or database documents that measure exactly one gigabyte in total digital storage volume
(D) Relational database systems configured exclusively to store string records written in uppercase text

22. Match the following elements of Big Data in List I with their descriptions in List II:
List I: Elements
P. Volume
Q. Velocity
R. Variety
S. Veracity
List II: Descriptions
1. The trustworthiness and accuracy of the data
2. The massive scale and amount of data generated
3. The different types and formats of data
4. The speed at which new data is generated and moved
(A) P-2, Q-4, R-3, S-1
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-3, R-4, S-1
(D) P-1, Q-2, R-3, S-4

23. In the context of Big Data, what does 'Volume' denote?
(A) The acoustic loudness and sound level of stored audio files
(B) The immense scale and total quantity of data generated and stored
(C) The overall network transmission speed across distributed servers
(D) The total proportion of errors and missing entries in a dataset

24. What does 'Velocity' mean when discussing the characteristics of Big Data?
(A) The rotational speed and airflow rate of a server cooling fan
(B) The physical geographic distance separating two remote network servers
(C) The rapid pace at which new data is generated, collected, and processed
(D) The speed with which software developers write and compile source code

25. Consider the following statements regarding the 'Variety' characteristic of Big Data:
I. It includes structured data like relational databases.
II. It includes unstructured data like text documents and videos.
III. It includes semi-structured data like XML files.
IV. It restricts data to only numeric values.
Which of the statements given above is/are correct?
(A) I, II, and III
(B) II, III, and IV
(C) I, III, and IV
(D) I, II, III, and IV

26. Which of the following is considered an example of unstructured Big Data?
(A) Social media posts, images, and videos
(B) A simple database table with names and ages
(C) A traditional library card catalog
(D) An Excel spreadsheet with sales figures

27. Why is Big Data processing highly important for modern businesses?
(A) It provides secure protocols to permanently erase legacy corporate files and archive records
(B) It reveals valuable hidden patterns, market trends, and actionable customer insights
(C) It fully automates employee management, eliminating the human resources department
(D) It optimizes server hardware so operations function without any internet connection

28. Consider the following applications of Big Data:
I. Predicting disease outbreaks in the health sector.
II. Optimizing crop yields based on weather patterns in agriculture.
III. Targeted advertising and customer recommendations in e-commerce.

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84. Which of the following technologies works as a decentralized, distributed public ledger that is highly secure and transparent?
(A) Relational Database Management System (RDBMS)
(B) Cloud Storage
(C) Blockchain
(D) Machine Learning

85. Consider the following statements about Smart Wearables (e.g., smartwatches):
I. They collect user health data like heart rate and step count.
II. They are a classic example of an IoT device.
III. They can often sync data with a smartphone via Bluetooth.
IV. They are incapable of connecting to the internet.
Which of the statements given above is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

86. Which application of AI involves translating text from one language to another automatically, such as Google Translate?
(A) Computer Vision
(B) Predictive Analytics
(C) Robotics
(D) Machine Translation

87. What is 'Computer Vision' in Artificial Intelligence?
(A) Ergonomic monitor display hardware engineered to minimize visual user eye strain
(B) Field enabling computers to extract meaningful data from digital images and videos
(C) The immersive sensory experience of wearing virtual reality goggles and headsets
(D) The graphical user interface and desktop environment of a computer operating system

88. Select the correct order of the typical Machine Learning process:
(A) Collect Data → Train Model → Preprocess Data → Evaluate Model
(B) Train Model → Collect Data → Evaluate Model → Preprocess Data
(C) Collect Data → Preprocess Data → Train Model → Evaluate Model
(D) Preprocess Data → Evaluate Model → Collect Data → Train Model

89. Which of the following best represents the concept of a 'Smart Grid'?
(A) An electronic spreadsheet workbook configured with automated mathematical calculation formulas
(B) An urban city block planned and constructed in a geometrically symmetrical square layout
(C) A computational display monitor engineered with high-resolution visual rendering features
(D) An electrical grid using IoT to manage power generation and distribution efficiently

90. What does 'Data Analytics' primarily involve?
(A) Analyzing raw datasets to extract meaningful conclusions and actionable insights
(B) Inputting financial transaction records manually into a paper accounting ledger
(C) Encrypting sensitive digital documents to ensure secure archival cloud storage
(D) Translating high-level software code into low-level machine executable language

91. In an IoT network, what is a 'Gateway'?
(A) A physical building entryway integrated with automated electronic smart lock mechanisms
(B) A hardware or software bridge connecting IoT devices to clouds and translating protocols
(C) The primary ambient sensor hardware component used specifically for measuring temperature
(D) Specialized antivirus software designed to secure residential wireless network routers

92. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Cloud computing allows businesses to scale their IT resources up or down easily.
Reason (R): Cloud services operate on a "pay-as-you-go" model and resources are pooled and provisioned on demand.
Choose the correct option:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

93. A 'Drone' used for spraying fertilizers in an agricultural field is essentially an example of:

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(A) Cryptography
(B) Firewall configuration
(C) Biometrics
(D) Malware analysis

57. How does basic voice-recognition technology function?
(A) Analyzing the physical body mass and weight of the speaking individual
(B) Tracking lip movements recorded via high-definition camera lenses
(C) Predicting intended user statements prior to vocalization using contextual guesses
(D) Converting spoken audio streams into text using acoustic and language models

58. Which of the following is a common daily-life use of face-recognition technology?
(A) Unlocking a smartphone securely
(B) Measuring blood pressure
(C) Printing a text document
(D) Connecting to a Wi-Fi network automatically

59. What does the term 'Robotics' fundamentally refer to?
(A) The historical study and cataloging of ancient mechanical tools and artifacts
(B) The field engineering the design, construction, operation, and application of robots
(C) The software development process of creating computer animations for interactive games
(D) The biological and anatomical analysis of human physiological body structures

60. Choose the correct statement defining 'Automation'.
(A) The administrative process of substituting electronic computers with manual human labor
(B) The application of technology to execute processes with minimal human intervention
(C) The automated system command executing scheduled file deletion on local drives at midnight
(D) The traditional logistics method of moving physical goods using hand-operated manual carts

61. In the industrial sector, what is the primary benefit of deploying robotics and automation?
(A) Higher operational efficiency, precision, and safe working capacity in hazardous spaces
(B) A higher frequency of critical errors and operational defects in manufacturing production
(C) A noticeable reduction in overall manufacturing speed and throughput volume
(D) Expanded operational demand for low-skilled manual labor on the factory floor

62. Consider the following statements about Cloud Computing:
I. It involves delivering computing services over the internet.
II. Users usually pay only for the cloud services they use.
III. It completely eliminates the need for any internet connection.
IV. Examples include cloud storage like Google Drive and Dropbox.
Which of the statements given above is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

63. What does 'Cloud' refer to in the term Cloud Computing?
(A) Atmospheric weather patterns that interfere with satellite broadband communication networks
(B) A local physical hard disk drive integrated directly inside a desktop personal computer
(C) An aesthetic computer enclosure or housing chassis painted in a standard white finish
(D) Internet-accessible remote servers and the software application databases operating on them

64. Which of the following is a key characteristic of Cloud Computing?
(A) Fixed, unscalable storage limits
(B) Requirement of physical servers located in the user's home
(C) On-demand self-service and resource pooling
(D) Inability to share files with others

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65. What does the cloud service model abbreviation 'SaaS' stand for?
(A) Storage as a Service
(B) Software as a Service
(C) Security as a Service
(D) System as a Service

66. Which cloud computing model provides virtualized computing resources over the internet, such as virtual machines and storage?

102. In healthcare, 'Telemedicine' has been greatly enhanced by emerging technologies. What does Telemedicine mean?
(A) Transmitting physical patient medical records via traditional postal mail services
(B) Utilizing optical laboratory telescopes to view biological bacterial cultures
(C) Promoting and selling pharmaceutical products through broadcast television networks
(D) Diagnosing and treating medical conditions remotely via telecom technologies

103. Which is the most appropriate description of an 'Algorithm'?
(A) An external physical component or hardware device belonging to a computer workstation
(B) A sequential set of rules followed to solve a problem or execute a calculation
(C) The central printed circuit motherboard responsible for interconnecting computer hardware
(D) A malicious software program engineered to disrupt standard operating system functions

104. Which of the following correctly differentiates Supervised from Unsupervised learning?
(A) Supervised learning requires no internet; Unsupervised learning requires internet
(B) Supervised learning is used only in robots; Unsupervised learning is used in PCs
(C) Supervised learning uses labeled data; Unsupervised learning uses unlabeled data
(D) Supervised learning is faster but less accurate than Unsupervised learning

105. Match the Cloud Computing deployment models in List I with their descriptions in List II:
List I: Deployment Model
P. Public Cloud
Q. Private Cloud
R. Hybrid Cloud
List II: Description
1. Cloud infrastructure operated solely for a single organization
2. Cloud infrastructure open to the general public over the internet
3. A combination of public and private clouds sharing data and applications
(A) P-2, Q-1, R-3
(B) P-1, Q-2, R-3
(C) P-3, Q-1, R-2
(D) P-2, Q-3, R-1

106. What is the fundamental purpose of 'Data Preprocessing' in Machine Learning?
(A) Cleaning and structuring raw datasets for effective consumption by algorithms
(B) Encrypting collected raw datasets so machine learning models cannot interpret them
(C) Executing automated purge commands to delete stored records permanently from memory
(D) Automatically generating and printing the final predictions without model training

107. Which type of data makes up the vast majority of Big Data generated today?
(A) Highly structured tables stored within relational database management systems
(B) Unstructured content such as social media posts, videos, and sensor logs
(C) Simple numerical arrays and single-dimensional vectors stored in basic text files
(D) Physical printed paper records archived manually in office storage cabinets

108. A smart refrigerator that can detect when you are out of milk and automatically add it to your digital shopping list is an application of:
(A) Block Printing
(B) Internet of Things (IoT)
(C) Quantum Physics
(D) Genetic Engineering

109. What is 'Telemetry' in the context of IoT and Automation?
(A) Collecting sensor measurements remotely and transmitting them to a central system
(B) Streaming live broadcast television programming continuously over internet connections
(C) A specialized diagnostic hardware tool used to measure physical network cables
(D) A standardized internet communication protocol designated for sending electronic emails

110. Consider the following statements about Facial Recognition Technology:
I. It maps facial features from a photograph or video.
II. It compares the captured data with a database of known faces.
III. It completely fails if the person is wearing a simple pair of clear eyeglasses.
IV. It is widely used in law enforcement and smartphone security.

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(A) Algorithmic models capable of directly experiencing and expressing genuine human emotional states
(B) Specialized creative writing software platforms used exclusively for generating romantic poetry
(C) Diagnostic software applications designed specifically to identify physical computer hardware failures
(D) The computational identification and categorization of text opinions to determine emotional tone

131. Which of the following is a potential negative consequence of widespread automation?
(A) Displacement of workers performing low-skill, repetitive manual labor
(B) A substantial increase in automated factory production and throughput speeds
(C) A notable reduction in human operational errors during manufacturing processes
(D) Significant reductions in long-term operational and labor costs for businesses

132. Match the technology in List I with its basic unit or component in List II:
List I: Technology
P. Deep Learning
Q. Internet of Things
R. Big Data
S. Cloud Computing
List II: Unit/Component
1. Artificial Neuron
2. Sensors
3. Petabytes/Exabytes of Data
4. Remote Servers
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-1, Q-3, R-2, S-4
(D) P-4, Q-2, R-3, S-1

133. What does 'Biometrics' typically use for security identification?
(A) Unique physiological or behavioral traits like fingerprints or facial structures
(B) Standard alphanumeric password strings containing letters, numbers, and symbols
(C) A plastic identity smart card containing an integrated microchip circuit
(D) A personal four-digit numerical identification code entered on a keypad

134. Siri, Alexa, and Google Assistant are prominent examples of:
(A) Enterprise Database Management Systems
(B) Desktop Computer Operating Systems
(C) Security Antivirus Software Applications
(D) Voice-Activated Virtual Assistants

135. Consider the following statements about the application of AI in Healthcare:
I. It can help doctors analyze X-rays more accurately.
II. It can assist in predicting disease outbreaks.
III. It replaces the legal responsibility of the doctor entirely.
Which of the statements given above is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

136. Which characteristic of Big Data highlights the challenge of dealing with data that changes rapidly and has different formats?
(A) Volume
(B) Veracity
(C) Variety
(D) Value

137. An AI system trained exclusively to play the game of chess and do nothing else is categorized as:
(A) General AI
(B) Super AI
(C) Cognitive AI
(D) Narrow AI

138. Consider the following components common to an IoT framework:
I. Sensors/Devices
II. Connectivity (Wi-Fi, Bluetooth)
III. Data Processing Platform
IV. User Interface
Which of these components are essential for a complete IoT solution?
(A) I and II only
(B) I, II, and III only
(C) II, III, and IV only
(D) I, II, III, and IV

139. Which technology allows an organization to rent computing power and storage over the internet instead of buying physical servers?
(A) Robotics
(B) Cloud Computing
(C) Edge Computing

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(B) II and III only
(C) I and III only
(D) I, II, and III

121. What does the term 'Autonomous' mean in the context of Robotics and AI?
(A) Operating hardware manually via direct human input using a wireless remote control
(B) A mechanical system requiring at least two human operators to perform basic tasks
(C) Software applications designed exclusively to run without active internet connections
(D) The capacity of a system to execute operations independently without human guidance

122. Which among the following best describes 'Cloud Storage'?
(A) Maintaining data remotely on internet servers managed by cloud providers as a service
(B) Saving digital files directly onto a portable USB flash memory drive plugged into a PC
(C) Burning and archiving optical data permanently onto a physical compact disc (CD-ROM)
(D) Storing temporary computational data volatilely within a computer's system RAM modules

123. The 'Turing Test' was originally designed to determine what?
(A) Determining whether a computer workstation has been compromised by malware
(B) Assessing if a machine demonstrates intelligence indistinguishable from a human
(C) Measuring the clock frequency and overall benchmark processing speed of a CPU
(D) Calculating the maximum storage volume that a physical hard disk drive can accommodate

124. In the context of Big Data, what does 'Veracity' refer to?
(A) The aesthetic visual presentation and graphical formatting of data
(B) The degree of trustworthiness, accuracy, and reliability of data
(C) The total digital storage volume of datasets measured in gigabytes
(D) The physical geographic server locations where data is hosted

125. Arrange the following stages of a typical Data Analytics workflow in the correct sequence:
I. Data Analysis and Modeling
II. Data Collection
III. Decision Making and Action
IV. Data Cleaning and Preprocessing
Which of the above statement(s) is/are correct?
(A) II, IV, I, III
(B) II, I, IV, III
(C) IV, II, I, III
(D) I, II, III, IV

126. An automated voice system that answers bank customer service calls and understands natural speech is an application of:
(A) An enterprise network firewall
(B) Low-level hardware formatting
(C) Conversational AI virtual assistants
(D) Optical character recognition tools

127. Which field focuses specifically on making machines capable of moving, assembling objects, and performing physical labor?
(A) Data Analytics
(B) Cloud Computing
(C) Cryptography
(D) Robotics

128. What is the primary concern raised by privacy advocates regarding IoT devices in smart homes?
(A) They occupy an excessive amount of physical living space inside residential homes
(B) They malfunction frequently, causing residential room temperatures to drop too cold
(C) They routinely gather personal user data, creating risks of privacy leaks or hacking
(D) They lack built-in wireless networking capabilities to connect to local Wi-Fi routers

129. How does AI assist in the agricultural practice of 'weed management'?
(A) Substituting natural farm soil with synthetic growth medium alternatives
(B) Utilizing computer vision to identify weeds and direct targeted herbicide application
(C) Eliminating dependency on natural sunlight using artificial solar lamps
(D) Forecasting future agricultural commodity prices and market values for invasive weeds

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130. What is 'Sentiment Analysis' in the context of Machine Learning and Natural Language Processing?

Which of the statements given above is/are correct?
(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

111. Which term describes the malicious act of tricking an AI system by feeding it carefully manipulated data to cause it to make mistakes?
(A) Cloud Phishing
(B) Defragmentation
(C) System Formatting
(D) Adversarial Attack

112. The Indian government's 'DigiLocker' service is based on which emerging technology concept?
(A) Robotics
(B) 3D Printing
(C) Cloud Storage
(D) Deep Learning

113. What is the primary function of a 'Firewall' in an IoT network?
(A) To actively cool server hardware components to prevent overheating
(B) To inspect and filter network traffic based on configured security rules
(C) To serve as a physical fireproof wall constructed inside a data center
(D) To amplify and extend the physical range of wireless network signals

114. In Big Data, the term 'Hadoop' is most closely associated with:
(A) A consumer product line of multi-functional fitness tracking wearable devices
(B) A specialized display monitor technology designed for high-resolution graphics
(C) A proprietary web browser engineered exclusively for corporate network security
(D) An open-source framework for distributed storage and processing of large datasets

115. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Deepfakes pose a significant threat to digital information credibility and personal reputation.
Reason (R): Deepfakes use sophisticated AI to create highly realistic but entirely fabricated audio and video content.
Choose the correct option:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

116. Which Indian initiative focuses on leveraging digital technologies like AI, IoT, and Cloud Computing to empower society and the economy?
(A) Make in India
(B) Swachh Bharat
(C) Digital India
(D) Skill India

117. Which of the following is considered 'Structured Data'?
(A) A relational database table containing structured records arranged in rows and columns
(B) A high-definition streaming digital video file published on an online platform
(C) An uncompressed digital voice note audio recording shared via instant messaging
(D) A compressed image file uploaded directly to a social media content platform

118. What is the term for a machine learning approach where an algorithm learns to make decisions by performing actions and receiving rewards or penalties?
(A) Unsupervised Learning
(B) Rote Learning
(C) Descriptive Learning
(D) Reinforcement Learning

119. A smart thermostat adjusting the room temperature based on when the user typically arrives home is demonstrating an intersection of:
(A) Robotics and Cryptography
(B) IoT and Machine Learning
(C) Cloud Storage and Blockchain
(D) Drones and 3D Printing

120. Consider the following statements regarding the use of AI in daily life:
I. AI powers email spam filters to detect malicious messages.
II. AI algorithms drive the recommendation feeds on social media platforms.
III. AI cannot be used in navigation applications like Google Maps.
Which of the statements given above is/are correct?
(A) I and II only

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(D) Cryptography

140. Consider the following statements regarding the 'Ethics of AI':

I. Developers must ensure that AI systems do not violate human privacy.
II. AI should be transparent so users understand how decisions are made.
III. It is ethically acceptable for AI algorithms to be intentionally biased against certain demographics.
IV. AI developers should be accountable for the outcomes of their systems.

Which of the statements given above is/are correct?

(A) I, II, and III
(B) I, II, and IV
(C) II, III, and IV
(D) I, III, and IV

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networks are called artificial neurons. Far from failing at visual tasks, neural networks excel at image processing, computer vision, and visual pattern recognition.

19. (A) Hidden Layers
In deep learning neural networks, hidden layers refer to all intermediate processing tiers situated between the primary input layer and final output layer. These hidden layers perform non-linear transformations and extract increasingly abstract features from raw input signals, enabling the overall architecture to comprehend complex, non-linear relationships within vast datasets.

20. (C) Deep Learning
Deep Learning architectures excel at processing high-dimensional unstructured data, making them the optimal technology for computer vision, image classification, and speech recognition. Multi-layered artificial neural networks automatically learn spatial, temporal, and acoustic representations, achieving exceptional accuracy levels when recognizing complex visual objects, human faces, and spoken phrases.

21. (A) Extremely large and complex data sets that exceed the processing capacity of traditional software tools
Big Data describes massive volumes of highly complex, structured, semi-structured, or unstructured datasets generated at high velocity. Because these information volumes far exceed the handling capacities of traditional relational databases and standard desktop processing applications, specialized distributed storage systems, specialized database frameworks, and advanced parallel analytical tools are required.

22. (A) P-2, Q-4, R-3, S-1
Big Data characteristics are defined by four core dimensions. Volume indicates the massive quantity and scale of generated data. Velocity represents the real-time speed of data generation and movement. Variety covers diverse structured, semi-structured, and unstructured data formats. Veracity assesses the trustworthiness, accuracy, and overall quality of collected information.

23. (B) The immense scale and total quantity of data generated and stored
Within Big Data terminology, Volume signifies the vast scale, total quantity, and cumulative physical size of datasets accumulated from diverse sources. Modern enterprises, digital platforms, and connected sensors continuously generate massive quantities of information measured in terabytes, petabytes, or exabytes, requiring scalable distributed storage architectures to store data efficiently.

24. (C) The rapid pace at which new data is generated, collected, and processed
Velocity defines the unprecedented rate and speed at which data streams are continuously generated, ingested, transmitted, and analyzed. Modern applications such as financial markets, social media platforms, and connected internet sensors produce real-time information streams that require immediate algorithmic processing to deliver timely insights and immediate operational responses.

25. (A) I, II, and III
Variety reflects the architectural diversity of modern Big Data streams. It incorporates structured data organized in relational tables, semi-structured formats like XML or JSON documents, and unstructured data such as text, images, and videos. Restricting Big Data exclusively to numeric values is incorrect, as diverse data representations constitute a primary characteristic.

26. (A) Social media posts, images, and videos
Unstructured data lacks a predefined data model or rigid organizational table structure, making it incompatible with standard relational database rows and columns. Social media updates, digital photographs, streaming video files, and audio recordings represent classic unstructured formats that require specialized big data processing and artificial intelligence models for extraction.

27. (B) It reveals valuable hidden patterns, market trends, and actionable customer insights
Processing Big Data allows organizations to extract strategic value from vast, complex datasets. Advanced analytics uncover hidden operational patterns, emerging consumer trends, customer behavioral shifts, and market inefficiencies. These analytical insights empower enterprise leaders to make informed, data-driven decisions, enhance customer satisfaction, optimize operational workflows, and gain competitive advantages.

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that enable computational devices to analyze data, extract meaningful patterns, and improve their performance on specific automated tasks over time without being explicitly programmed for every scenario.

10. (A) Using algorithms to analyze data, learn patterns, and make informed predictions
Machine Learning is a discipline focused on building algorithms that process input datasets to discover underlying trends, relationships, and underlying structures. By identifying these empirical patterns, the algorithm generalizes from historical examples to make automated predictions or decisions on unseen data, eliminating the necessity of writing fixed step-by-step instructions.

11. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Machine Learning systems enhance their functionality and accuracy over time by processing accumulating datasets and experiences. The capability to learn autonomously from statistical data allows these algorithms to adjust internal parameters without requiring manual code modifications. Consequently, the ability to improve task execution directly stems from this self-learning mechanism powered by past data.

12. (B) Learning where the model is trained on a labeled dataset
Supervised learning is a fundamental paradigm in machine learning where algorithms are trained using datasets containing labeled inputs and corresponding correct target outputs. The computational model analyzes input features alongside known labels to discover mathematical mappings, enabling it to accurately predict correct labels when presented with new, unlabeled evaluation data.

13. (A) Unsupervised Learning
Unsupervised learning algorithms analyze datasets that lack predefined target labels or structured annotations. The primary objective of these models is to independently explore raw data to discover inherent structures, hidden patterns, natural groupings, or anomalies. Common applications include data clustering, anomaly detection, and dimensionality reduction across complex, unorganized information sets.

14. (C) Artificial Neural Networks configured with multiple layers
Deep Learning is an advanced branch of machine learning that utilizes multi-layered Artificial Neural Networks to process intricate data structures. These deep computational architectures consist of input, output, and multiple processing layers, enabling automated feature extraction and representation learning across complex data domains such as images, natural language, and high-dimensional signals.

15. (C) I and III only
Artificial Intelligence serves as the overarching domain focused on creating smart computational systems. Machine Learning constitutes a specific subfield of Artificial Intelligence focused on learning from data, while Deep Learning represents a specialized subset within Machine Learning that utilizes multi-layered neural networks to solve highly complex cognitive pattern recognition tasks.

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16. (C) Deep Learning relies on multi-layered artificial neural networks, whereas standard Machine Learning utilizes simpler statistical models
Standard Machine Learning algorithms rely heavily on simpler statistical frameworks and often require human experts to manually perform feature extraction from datasets. In contrast, Deep Learning utilizes multi-layered Artificial Neural Networks capable of automatically learning hierarchical feature representations directly from raw, unorganized data such as images, audio, and raw unstructured text.

17. (B) The biological network of the human brain and nervous system
Artificial Neural Networks are computational models designed to mirror the structural organization and information processing methods of biological brains. They mimic biological neural networks by transmitting data through interconnected nodes called artificial neurons, adjusting connection weights based on incoming signals to perform complex pattern recognition, learning, and automated decision making tasks.

18. (C) I and III only
Artificial Neural Networks comprise an input layer to receive data, hidden layers to transform features, and an output layer to present results. The foundational processing nodes within these

37. (A) Using IoT sensors to continuously track soil moisture, crop health, and weather conditions
Smart farming applies Internet of Things technologies to modern agricultural management. By installing networked field sensors, farmers continuously monitor soil moisture content, ambient temperature, nutrient levels, microclimates, and crop health parameters in real time. This continuous stream of observational data enables precise irrigation schedules, targeted fertilizer application, and optimized yields.

38. (D) Actuator
An actuator is an essential hardware component in an Internet of Things architecture that executes physical control actions based on converted digital control signals. While sensors gather physical readings, actuators convert computational outputs into physical motion, such as opening a valve, switching on an irrigation pump, or locking a physical door.

39. (B) Bluetooth
Bluetooth is a standardized short-range wireless communication protocol extensively utilized across Internet of Things environments. It facilitates low-power, localized data exchange between personal smart devices, wearable health trackers, home appliances, and nearby gateways over short radio distances, making it ideal for localized, battery-efficient network connections.

40. (C) Sensor → Network → Cloud Processing → User Interface
Data flow within an Internet of Things system follows a structured sequence. Primary physical inputs are captured by a sensor, transmitted across a network, and ingested by cloud processing infrastructure for analysis. Finally, aggregated insights and control options are presented to the end user through an interactive user interface application.

41. (D) Diagnostic medical image analysis for scans like X-rays and MRIs
In healthcare, Artificial Intelligence systems powered by deep learning and computer vision algorithms analyze complex diagnostic medical images, including digital X-rays, computed tomography scans, and magnetic resonance images. These automated analytical tools assist medical professionals by identifying subtle structural abnormalities, tissue anomalies, and early-stage cancerous lesions with high precision.

42. (A) Accelerating drug discovery and development via algorithmic pattern recognition
Machine Learning transforms the pharmaceutical industry by accelerating drug discovery pipelines. Algorithms analyze complex biological datasets, molecular structures, and chemical interaction patterns to predict prospective candidate compounds, evaluate efficacy, and identify potential side effects rapidly. This computational screening reduces experimental trial time and research costs significantly.

43. (B) Big Data and Artificial Intelligence
Combining Electronic Health Records with automated predictive algorithms demonstrates the convergence of Big Data and Artificial Intelligence. Vast volumes of historical patient documentation, treatment histories, and clinical measurements represent Big Data, while machine learning algorithms analyze these extensive records to forecast hospital readmission risks and optimize clinical outcomes.

44. (B) Leveraging AI, IoT, and analytics to optimize crop yields by tailored delivery of plant resources
Precision Agriculture integrates modern technological innovations, including Artificial Intelligence, connected field sensors, and big data analytics, to optimize farming practices. Instead of applying uniform treatment across entire fields, precision farming monitors field conditions at granular levels, allowing precise distribution of water, fertilizers, and pesticides tailored to specific crop requirements.

45. (A) P-4, Q-3, R-2, S-1
Drones capture high-resolution aerial imagery over expansive agricultural fields, while Internet of Things sensors measure physical soil moisture continuously. Artificial Intelligence algorithms evaluate crop leaf images to diagnose plant diseases accurately, and Big Data analytics processes historical weather records to forecast seasonal crop production yields and agricultural trends effectively.

46. (C) Minimizing harvest wastage through predictive analytics on optimal harvesting windows
Deploying Artificial Intelligence in agriculture offers major benefits, such as minimizing

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28. (A) I, II, and III
Big Data analytics delivers immense benefits across industries, including forecasting disease outbreaks in public health, optimizing agricultural yield based on weather patterns, and powering personalized customer recommendations in e-commerce. Decreasing personal computer processing speed is an unintended technical bottleneck rather than a genuine operational benefit or intended application.

29. (A) Utilizing distributed computing frameworks across interconnected clusters of computers
Big Data sets exceed the physical memory and processing capacity of single computing nodes. To handle these massive workloads, distributed computing frameworks divide large datasets into smaller chunks and distribute them across connected computing clusters. This parallel processing approach ensures scalable storage, efficient computation, fault tolerance, and rapid analytical output.

30. (C) Data Collection → Data Storage → Data Analysis → Data Visualization
A standard big data processing pipeline follows a logical operational sequence. Raw information is first gathered from primary sources during data collection, then securely written into distributed systems during data storage. Afterwards, analytics algorithms run during data analysis, and finally actionable findings are rendered graphically through clean data visualization.

31. (D) Internet of Things
The acronym IoT expands to Internet of Things within computer technology and engineering. This paradigm describes a global network consisting of physical items embedded with sensors, electronics, software, and connectivity capabilities, allowing these physical objects to seamlessly collect, transmit, and exchange data over public or private communication networks.

32. (C) A network of physical devices with embedded sensors and software that exchange data over the internet
The Internet of Things is defined as an interconnected network composed of physical objects integrated with embedded sensors, microcontrollers, specialized software, and network communication modules. This architecture allows physical equipment, appliances, and industrial machinery to gather real-time environmental data and communicate with central servers or other devices across internet protocols.

33. (B) To gather real-time environmental data from surrounding physical spaces
Sensors represent fundamental input hardware components within any Internet of Things deployment. Their primary objective is to measure physical parameters from the surrounding environment—such as ambient temperature, humidity, pressure, motion, light levels, or chemical presence—and convert these analog physical readings into digital data signals for downstream processing.

34. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Internet of Things devices rely on network connectivity, such as Wi-Fi, cellular, or Bluetooth, to function effectively within an ecosystem. Connectivity is essential because these endpoint devices must transmit collected sensory data to central cloud platforms for processing, enabling remote monitoring, analytics, and automated control actions.

35. (A) A smart thermostat controlling climate settings remotely via a connected mobile app
Smart thermostats serve as exemplary smart home Internet of Things devices because they contain microprocessors, temperature sensors, and wireless networking modules. They connect to internet networks, allowing homeowners to monitor ambient temperatures and modify residential heating or cooling settings remotely using smartphone applications or automated machine learning schedules.

36. (C) By deploying connected sensors to optimize traffic routing, waste disposal, and municipal energy usage
Smart cities integrate Internet of Things infrastructure by placing connected sensor arrays across public infrastructure. These network sensors collect real-time data regarding urban traffic congestion, public parking availability, municipal waste container fill levels, and street lighting status. Analytical systems evaluate these telemetry inputs to optimize public utility operations efficiently.

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ANSWERS

1. (B) Artificial Intelligence
Artificial Intelligence represents a specialized field of computer science dedicated to building hardware and software systems capable of performing tasks that traditionally require human cognitive capabilities. The acronym AI is universally recognized across technical and academic domains to denote machines engineered for learning, reasoning, automated decision making, visual perception, and natural language understanding.

2. (D) A machine's ability to perform tasks that typically require human intelligence
Artificial Intelligence is defined as the capability of a machine or computational system to simulate human cognitive functions. These functions encompass learning from past experiences, reasoning through complex problems, adapting to new information, recognizing patterns, and making autonomous decisions without requiring continuous human intervention to complete everyday or technical operational tasks.

3. (A) John McCarthy
John McCarthy is widely celebrated as the father of Artificial Intelligence due to his pivotal role in shaping the discipline. He coined the term Artificial Intelligence in 1955 and organized the historical Dartmouth Conference in 1956, which officially established AI as an autonomous field of academic research and computer software development.

4. (C) AI that is designed and trained for a single, specific task
Narrow Artificial Intelligence, also known as Weak AI, refers to intelligent systems engineered and trained to execute a single specific operational function or a constrained set of related tasks. These specialized algorithms operate efficiently within pre-defined boundaries and cannot transfer their learning or perform cognitive operations outside their programmed target application.

5. (A) A spam email filter
A spam filter represents a classic real-world application of Narrow Artificial Intelligence because it focuses strictly on analyzing incoming electronic messages to identify unwanted content. It relies on trained machine learning algorithms to classify emails based on pre-defined parameters and textual patterns, operating within a dedicated scope without displaying generalized cognitive intelligence.

6. (D) AI capable of learning, reasoning, and applying intelligence across diverse domains
General Artificial Intelligence, often described as Strong AI, refers to a theoretical form of machine intelligence that possesses human-like cognitive abilities across all domains. Such systems would independently learn, reason, adapt, comprehend abstract concepts, and apply knowledge dynamically to solve novel problems without relying on domain-specific training or human intervention.

7. (B) Artificial Intelligence
Recommendation engines utilized by digital streaming platforms rely on Artificial Intelligence and machine learning algorithms to evaluate user preferences, viewing histories, and behavioral patterns. By analyzing large volumes of data, these computational systems generate personalized content suggestions, predicting which movies or series an individual user is most likely to enjoy watching.

8. (C) Traditional mechanical typewriters
Traditional mechanical typewriters operate entirely through physical levers, springs, and manual force without any computational processing unit, electronic circuitry, or algorithmic decision making. Conversely, voice assistants, navigation route optimization tools, and smartphone facial recognition features represent modern applications driven by advanced Artificial Intelligence, natural language processing, and digital image processing technologies.

9. (D) Artificial Intelligence
Machine Learning is fundamentally categorized as a specialized subfield within the broader domain of Artificial Intelligence. It focuses on developing mathematical algorithms and statistical models

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post-harvest crop wastage through predictive analytical models. By evaluating real-time weather forecasts, soil conditions, and crop maturity data, predictive algorithms determine optimal harvesting schedules, preserving crop quality, reducing environmental loss, and maximizing overall operational productivity for farmers.

47. (D) By constructing adaptive, personalized learning pathways tailored to individual student needs
Artificial Intelligence transforms modern education by constructing adaptive, personalized learning frameworks. Machine learning algorithms analyze student performance metrics, learning speeds, and comprehension gaps to tailor instructional content dynamically. This customized approach ensures students receive targeted exercises, immediate feedback, and remedial support aligned with their unique educational requirements.

48. (C) Evaluating standardized assessments and written answers using automated algorithms to assist educators
Automated grading tools utilize specialized machine learning and natural language processing algorithms to evaluate standardized objective assessments and written student assignments. These software platforms assist educators by providing fast, consistent, and impartial scoring, thereby reducing clerical administrative burdens and enabling teachers to focus more time on personalized student instruction.

49. (B) Physical maintenance of school buildings
Physical facility maintenance—such as repairing plumbing, painting walls, and structural janitorial care—requires direct manual labor and physical intervention, which falls outside the scope of Artificial Intelligence software. Conversely, intelligent tutoring platforms, automated administrative task management tools, and Natural Language Processing plagiarism detection applications represent direct, well-established AI implementations.

50. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Virtual assistants interpret voice commands and generate natural spoken responses effectively. This interactive speech capability is driven by Natural Language Processing and Machine Learning algorithms that convert audio signals into textual data, analyze the user's intent, execute requested tasks, and construct contextual language responses.

51. (A) Software engineered to simulate human conversation via text or voice
A chatbot is a software program engineered to simulate human conversation through text messages or spoken voice interactions. Powered by predefined scripts or advanced Natural Language Processing models, chatbots interpret incoming user queries and deliver automated, contextual responses, making them popular across customer service, website support, and messaging platforms.

52. (A) I and II only
Chatbots deliver significant operational benefits by offering uninterrupted around-the-clock customer support and concurrently managing thousands of user inquiries without latency. They operate autonomously using automated software logic and Natural Language Processing models, completely eliminating the necessity of human operators manually typing out real-time responses for every single routine query.

53. (A) Natural Language Processing (NLP)
Natural Language Processing is the domain of artificial intelligence that empowers computer software to analyze, interpret, and extract intent from human language text. By parsing syntax, evaluating vocabulary, and assessing contextual semantics, Natural Language Processing algorithms allow chatbots to comprehend user messages accurately and formulate appropriate contextual responses.

54. (D) Amazon
The voice-controlled virtual assistant Alexa was developed and introduced by Amazon. Built into smart speakers and integrated devices, Alexa utilizes cloud-based speech recognition, Natural Language Processing, and machine learning models to answer user queries, play audio content, control smart home devices, and execute diverse voice-driven tasks seamlessly.

55. (B) Apple
Siri is a voice-activated virtual assistant developed by Apple and integrated natively across its ecosystem of consumer hardware, including smartphones, tablets, smartwatches,

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messages to classify expressed opinions as positive, negative, or neutral, helping businesses gauge public perception and brand satisfaction.

131. (A) Displacement of workers performing low-skill, repetitive manual labor
Widespread industrial process automation presents significant socio-economic challenges, particularly the displacement of human workers performing repetitive, low-skilled manual tasks. As automated robotic hardware and artificial intelligence systems take over routine labor operations, impacted workers face job loss and must undergo retraining to transition into newly emerging technical positions.

132. (A) P-1, Q-2, R-3, S-4
Deep Learning relies on artificial neurons configured within multi-layered neural networks. The Internet of Things relies on physical sensors to collect environmental data. Big Data involves managing petabytes or exabytes of diverse information, and Cloud Computing delivers computational resources hosted across remote global server infrastructure over the internet.

133. (A) Unique physiological or behavioral traits like fingerprints or facial structures
Biometric security identification relies on measuring distinct physiological or behavioral characteristics unique to an individual. Commonly utilized biometric traits include fingerprint patterns, iris scans, facial spatial structures, and voice characteristics. These biological markers enable highly secure, automated user authentication, reducing reliance on easily forgotten passwords or physical keys.

134. (D) Voice-Activated Virtual Assistants
Siri, Alexa, and Google Assistant represent prominent commercial implementations of voice-activated virtual assistants. These smart software platforms leverage voice recognition, natural language processing, and artificial intelligence to interpret spoken commands, answer user queries, control smart home appliances, and automate personal tasks across mobile devices and smart speakers.

135. (A) I and II only
Artificial Intelligence enhances healthcare by analyzing digital X-rays with high diagnostic precision and tracking epidemiological data to predict regional disease outbreaks. However, AI acts strictly as a clinical decision-support tool, meaning human medical professionals retain full legal responsibility and ethical oversight for patient diagnostic and treatment choices.

136. (C) Variety
The Variety characteristic of Big Data highlights the complexity of handling rapidly evolving data across structured, semi-structured, and unstructured formats. Managing diverse information streams—such as relational database tables, social media posts, text documents, sensor logs, images, and streaming media—presents distinct structural processing challenges for modern data analytics platforms.

137. (D) Narrow AI
An Artificial Intelligence system trained specifically to play chess is classified as Narrow AI. Because its algorithmic design and optimization focus exclusively on evaluating board positions and selecting chess moves, it cannot apply its computational intelligence to perform any other cognitive tasks outside its dedicated gaming domain.

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138. (D) I, II, III, and IV
A complete Internet of Things deployment requires four essential interconnected layers. Endpoint sensors collect physical environmental data, while network connectivity options like Wi-Fi or Bluetooth transmit signals. Cloud processing platforms analyze incoming telemetry data, and an interactive user interface allows end users to monitor and control system actions.

139. (B) Cloud Computing
Cloud Computing enables enterprise organizations to rent computational processing power, data storage capacity, and software applications over the internet on demand. By adopting this pay-as-you-go service framework, businesses avoid heavy upfront capital investments in physical data center hardware, achieving high operational scalability and technical flexibility.

140. (B) I, II, and IV
Ethical AI frameworks dictate that developers must protect user privacy, design transparent decision-making models, and remain accountable for system outcomes. Intentionally programming AI algorithms to display bias against specific demographics violates fundamental ethical guidelines, as responsible AI development

providers. Multiple computing resources are dynamically pooled and shared among clients to achieve high scalability and efficiency.

65. (B) Software as a Service
The acronym SaaS expands to Software as a Service within cloud computing architecture. Under this software distribution framework, application software is centrally hosted on remote cloud servers and accessed by end users through web browsers or lightweight client applications over the internet, eliminating local software installation and maintenance.

66. (D) IaaS (Infrastructure as a Service)
Infrastructure as a Service provides virtualized hardware computing resources over internet connections. Under this cloud delivery model, clients rent virtual servers, network switches, storage space, and firewalls on demand. Enterprise customers retain complete software control over operating systems, databases, and deployed applications without purchasing physical data center hardware.

67. (A) Software as a Service (SaaS)
Web applications like Google Docs and Microsoft Office 365 exemplify Software as a Service. These document editing platforms operate entirely within cloud infrastructure and are delivered to end users through web browser software interfaces, allowing users to create, modify, and store documents online without managing underlying computing infrastructure.

68. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Emerging technological tools like artificial intelligence and process automation are reshaping global employment markets. Because automated systems execute repetitive, rules-based tasks faster and with fewer errors than human workers, reliance on manual labor in those specific positions diminishes, causing direct job displacement and restructuring employment requirements.

69. (A) Creating new employment opportunities in AI maintenance, data science, and engineering
Although automation and Artificial Intelligence eliminate certain routine manual jobs, they foster job market growth by creating brand new technical career paths. Emerging operational roles require skilled professionals in machine learning development, data engineering, cloud infrastructure management, robotics maintenance, data privacy, and ethical compliance to support intelligent automated systems.

70. (D) Educating workers in modern skills to adapt to roles working alongside automated systems
Upskilling refers to educating and training existing employees to acquire updated professional competencies required in evolving workplaces. As digital transformation and automation alter traditional operational workflows, upskilling equips human workers with modern technological knowledge, analytical abilities, and soft skills needed to collaborate effectively alongside automated artificial intelligence systems.

71. (B) The entitlement of individuals to control the collection, sharing, and use of personal data
Data Privacy within ethics and information security relates to an individual's right to control how their personal information is collected, stored, shared, and processed. With massive data aggregation across AI systems, safeguarding personal data privacy ensures organizational compliance, mitigates unauthorized data surveillance, and prevents sensitive user data misuse.

72. (C) AI algorithms producing unfair outcomes due to historical biases present within their training datasets
Algorithmic Bias occurs when an Artificial Intelligence system produces systematically prejudiced or unfair outputs. This phenomenon primarily arises when historical training datasets contain systemic societal biases, unrepresentative demographic sampling, or flawed historical decisions. The machine learning model absorbs these patterns, inadvertently perpetuating discriminatory practices during automated predictions.

73. (D) Algorithmic Bias
An automated recruitment tool systematically favoring male applicants over female candidates demonstrates Algorithmic Bias. Because the machine learning model was trained on historical hiring data reflecting past gender imbalances, it learned to associate male applicants with higher hiring preference, thereby reinforcing historical human prejudices within its automated screening logic.

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74. (A) Enabling users to comprehend the logic behind an AI model's specific output
Explainable AI emphasizes transparency, enabling human users and system auditors to comprehend how machine learning models reach specific automated decisions. Ethical transparency ensures that complex artificial intelligence logic can be inspected, verified, and understood, thereby preventing unaccountable black-box decision making across high-stakes domains like medicine, finance, and criminal justice.

75. (A) I and II only
Emerging technologies introduce critical societal challenges. Extensive facial recognition deployment sparks concerns regarding privacy erosion and mass public surveillance, while biased training data causes algorithmic systems to discriminate against protected groups. However, technology does not eliminate cybercrime; rather, sophisticated digital tools introduce new cybersecurity threats and operational risks.

76. (B) Synthetic media replacing an individual's likeness in images or video using AI algorithms
A Deepfake refers to synthetic digital media, including manipulated video clips, images, or audio recordings, generated using advanced deep neural networks. By swapping faces, altering facial expressions, or synthesizing realistic voice patterns, deepfake technology creates highly convincing yet entirely fabricated visual and auditory representations of human beings.

77. (A) Bot
A bot, derived from the word robot, is an automated computer program designed to execute repetitive software tasks autonomously over network environments. While many bots serve beneficial operational purposes like indexing search web pages, malicious bots are programmed to automate cyberattacks, generate internet spam, scrape data, or manipulate online traffic.

78. (C) Processing data on local devices or edge servers rather than transmitting it to distant clouds
Edge Computing is a distributed IT paradigm where computational operations and data storage are performed locally on physical devices or near-edge servers rather than relying on centralized cloud data centers. By processing data locally near its origination source, systems significantly optimize performance for real-time Internet of Things applications.

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79. (D) It lowers latency and bandwidth consumption by processing data close to the source
Edge Computing provides key operational advantages over centralized cloud architecture for Internet of Things applications. By analyzing telemetry data locally near edge endpoints, edge computing drastically reduces transmission latency and lowers network bandwidth consumption, enabling real-time automated decision making crucial for time-critical operations like autonomous vehicles and industrial safety.

80. (A) P-2, Q-3, R-4, S-1
Data Mining focuses on discovering actionable patterns within large datasets. Machine Learning enables software systems to learn autonomously from data without explicit coding. Cloud Computing delivers scalable computational services over internet links, and the Internet of Things establishes a connected physical network of smart devices exchanging data.

81. (B) Natural Language Processing
NLP stands for Natural Language Processing within computational linguistics and artificial intelligence. This specialized field focuses on building software algorithms capable of reading, deciphering, understanding, and generating natural human spoken or written languages, bridging the communication gap between human linguistic patterns and electronic computer systems.

82. (D) Text-to-Speech (TTS)
Text-to-Speech technology synthesizes spoken natural voice output from electronic text input. Using linguistic processing and speech synthesis models, Text-to-Speech systems read written sentences aloud, enabling automated screen readers, interactive voice response units, navigation tools, and virtual assistant applications to communicate verbally with users.

83. (A) AI, IoT sensors, and Machine Learning algorithms
Autonomous self-driving vehicles operate by integrating Artificial Intelligence, Internet of Things sensors, and Machine Learning algorithms. Sensors like cameras, radar, and

LiDAR continuously collect environmental data, while deep learning models evaluate surroundings in real time to navigate roads, detect physical obstacles, recognize signals, and execute driving decisions safely.

84. (C) Blockchain
Blockchain is a decentralized, distributed ledger technology that securely records transactions across a peer-to-peer computer network. Information logged on a blockchain is cryptographically linked, transparent, and tamper-resistant, ensuring data integrity and trust without requiring central intermediaries, making it ideal for cryptocurrencies and secure supply chains.

85. (A) I, II, and III
Smart wearables like smartwatches represent typical Internet of Things endpoint devices that monitor physiological metrics such as heart rate and physical steps. These wearables connect to smartphones via short-range Bluetooth to synchronize fitness records. Claiming wearables cannot connect to the internet is incorrect, as many feature built-in Wi-Fi or cellular connections.

86. (D) Machine Translation
Machine Translation is a branch of natural language processing focused on automatically translating written or spoken content from one human language into another. Applications like Google Translate utilize deep learning and neural network models to parse linguistic structure, comprehend semantic context, and generate accurate language translations instantly across multi-lingual datasets.

87. (B) Field enabling computers to extract meaningful data from digital images and videos
Computer Vision is a domain within artificial intelligence that enables computers to interpret visual information from digital photographs, camera feeds, and video streams. Using pattern recognition and neural network models, computer vision systems automate tasks such as object identification, motion tracking, image classification, and facial recognition across various industrial applications.

88. (C) Collect Data → Preprocess Data → Train Model → Evaluate Model
The standard workflow for constructing a machine learning solution follows a logical operational sequence. Raw information is first gathered during data collection and refined through data preprocessing. Next, algorithms learn patterns during model training, and finally predictive performance is assessed against validation benchmarks during model evaluation.

89. (D) An electrical grid using IoT to manage power generation and distribution efficiently
A Smart Grid modernizes electricity distribution networks by integrating Internet of Things sensors, smart meters, and communication tools across power grids. This connected infrastructure continuously monitors electrical consumption, detects outage locations automatically, balances energy loads dynamically, and optimizes the distribution of renewable energy across municipal power networks.

90. (A) Analyzing raw datasets to extract meaningful conclusions and actionable insights
Data Analytics encompasses examining, transforming, and modeling raw datasets to uncover underlying trends, correlation patterns, and operational insights. By applying statistical methodologies and automated software analytics, organizations convert complex historical data into actionable business intelligence, facilitating strategic decision making and optimizing operational workflows across diverse industries.

91. (B) A hardware or software bridge connecting IoT devices to clouds and translating protocols
An IoT Gateway acts as a vital bridge within internet of things architectures, establishing communication links between localized smart endpoint devices and centralized cloud platforms. It collects sensor telemetry, translates diverse networking protocols, manages security filtering, and pre-processes data locally before routing information across external internet networks.

92. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Cloud computing offers organizations exceptional IT resource elasticity, allowing computing power and storage to scale seamlessly up or down based on operational demands. This flexibility is direct enabled by the pay-as-you-go commercial model, where multi-tenant computing resources are

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and computers. Siri employs voice recognition, natural language processing, and cloud services to execute user commands, send messages, set reminders, and answer inquiries effectively.

56. (C) Biometrics
Facial recognition technology belongs to the domain of biometrics, which focuses on identifying individuals through unique biological or physical characteristics. By analyzing distinct facial geometries, distance between nodal points, and facial features from digital images, biometric facial recognition provides automated user authentication and access control for security applications.

57. (D) Converting spoken audio streams into text using acoustic and language models
Voice recognition systems operate by capturing spoken audio signals, filtering background interference, and analyzing speech frequency patterns. Acoustic and language models translate these digitized vocal signals into written text characters, enabling computer applications to interpret human verbal instructions, transcribe dictated content, and respond appropriately to voice commands.

58. (A) Unlocking a smartphone securely
Unlocking personal smartphones securely represents one of the most widespread consumer applications of facial recognition technology. Embedded cameras capture facial spatial geometry, converting visual traits into digital representations. These maps are verified against stored biometric templates, granting device access rapidly without requiring physical PIN codes or manual passwords.

59. (B) The field engineering the design, construction, operation, and application of robots
Robotics is an interdisciplinary branch of engineering and computer science that encompasses the design, construction, programming, operation, and physical application of robots. This discipline combines mechanical design, electrical circuitry, sensor technology, control systems, and artificial intelligence to build autonomous or semi-autonomous physical machines capable of executing manual tasks.

60. (B) The application of technology to execute processes with minimal human intervention
Automation refers to the integration of technology, control systems, and specialized software to perform industrial, business, or operational processes with minimal direct human intervention. By automating repetitive or manual workflows, organizations increase processing speed, improve operational accuracy, ensure consistent quality standards, and optimize overall resource management.

61. (A) Higher operational efficiency, precision, and safe working capacity in hazardous spaces
Implementing industrial robotics and process automation yields massive operational advantages. Modern industrial robots execute repetitive assembly tasks with extreme precision, maintain high output speeds without operational fatigue, and significantly minimize manufacturing defects. Furthermore, deploying automated machinery in hazardous industrial environments safeguards human workers from dangerous working conditions.

62. (B) I, II, and IV
Cloud computing involves delivering computing services, such as storage, processing, and software applications, over internet connections, typically using pay-as-you-go pricing models. Common cloud platforms include online storage providers like Google Drive and Dropbox. However, continuous internet or network connectivity remains essential to access these remote services reliably.

63. (D) Internet-accessible remote servers and the software application databases operating on them
In computer terminology, the term Cloud describes a global network of remote servers hosted on the internet that manage, store, process, and deliver data and application services. Rather than relying on local computing hardware, users access software applications, databases, and computational resources securely through web network links.

64. (C) On-demand self-service and resource pooling
A defining characteristic of Cloud Computing is on-demand self-service combined with resource pooling. Users can provision processing capacity, storage, and database services automatically as needed, without human intervention from service

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contactless identification without requiring direct optical line-of-sight scanning.

102. (D) Diagnosing and treating medical conditions remotely via telecom technologies
Telemedicine involves utilizing telecommunication networks, video conferencing software, and remote monitoring tools to deliver healthcare services across physical distances. Medical practitioners use telemedicine platforms to evaluate patient symptoms, diagnose health conditions, prescribe treatments, and offer medical consultations remotely, expanding healthcare access to isolated rural communities.

103. (B) A sequential set of rules followed to solve a problem or execute a calculation
An algorithm is a well-defined, step-by-step sequence of instructions or logical rules followed by computational systems to solve specific problems or execute processing tasks. Algorithms serve as the foundational backbone of computer software, guiding operations ranging from simple arithmetic calculations to complex artificial intelligence machine learning predictions.

104. (C) Supervised learning uses labeled data; Unsupervised learning uses unlabeled data
The fundamental distinction between supervised and unsupervised learning lies in dataset labeling. Supervised learning algorithms rely on labeled training datasets containing explicit input-output target pairs to learn mapping functions, whereas unsupervised learning algorithms process raw, unlabeled datasets to independently discover inherent patterns, structural groupings, and underlying data clusters.

105. (A) P-2, Q-1, R-3
Public cloud infrastructure is hosted by third-party service providers and accessible to the general public over internet networks. Private cloud deployment is dedicated exclusively to a single enterprise organization for heightened security. Hybrid cloud solutions combine public and private environments, facilitating data sharing across dynamic operational models.

106. (A) Cleaning and structuring raw datasets for effective consumption by algorithms
Data Preprocessing is a critical initial stage in machine learning workflows focused on preparing raw information for training algorithms. This process involves handling missing values, removing noise, eliminating duplicate records, normalizing numerical scales, and encoding categorical variables, ensuring high-quality structured data inputs that maximize model training performance and predictive accuracy.

107. (B) Unstructured content such as social media posts, videos, and sensor logs
The vast majority of modern Big Data consists of unstructured information formats generated continuously across digital ecosystems. Unlike structured database tables, unstructured content—such as text documents, social media interactions, digital audio recordings, high-resolution videos, and raw Internet of Things sensor telemetry—lacks predefined relational models, requiring specialized analytical tools.

108. (B) Internet of Things (IoT)
A smart refrigerator that tracks food inventory, detects depleted items, and automatically updates digital shopping lists demonstrates a practical Internet of Things application. Embedded sensors monitor internal contents, while network connectivity allows the appliance to transmit inventory data to user smartphones, automating domestic kitchen management through connected technology.

109. (A) Collecting sensor measurements remotely and transmitting them to a central system
Telemetry refers to the automated sensing, collection, and remote transmission of physical measurement data from distant sources to central receiving stations for monitoring. In Internet of Things environments, telemetry systems continuously relay operational metrics—such as temperature, pressure, structural vibration, or speed—enabling remote system diagnostics and real-time operational management.

110. (B) I, II, and IV
Facial recognition systems map facial nodal metrics from photographs or video feeds and compare these biometric vectors against stored database records to authenticate identities. These biometric systems operate effectively across security applications, including law enforcement investigations and smartphone access control, even when subjects wear simple clear prescription eyeglasses.

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pooled centrally and provisioned automatically on demand.

93. (A) An Unmanned Aerial Vehicle (UAV) integrated with automated agricultural technology
An agricultural drone used for spraying liquid fertilizers or pesticides represents an Unmanned Aerial Vehicle integrated with automated technology. Equipped with flight controllers, GPS guidance, and precision spray nozzles, these airborne systems automate field coverage, optimizing crop management while reducing physical labor and chemical waste.

94. (C) Analyzing historical data with machine learning to forecast probable future outcomes
Predictive Analytics involves leveraging historical datasets, statistical algorithms, and machine learning models to identify patterns and forecast probable future events. By evaluating past operational trends and current variables, predictive analytical frameworks assist businesses in anticipating consumer demand, managing financial risks, and planning preventive maintenance effectively.

95. (D) A virtual simulation or digital model reflecting a physical object, process, or system
A Digital Twin is a dynamic computational simulation or software representation designed to mirror a real-world physical object, industrial asset, or system. Fed by real-time Internet of Things sensor telemetry, digital twins allow engineers to monitor performance, simulate physical wear, test scenario modifications, and predict equipment maintenance requirements accurately.

96. (C) Analyzing customer buying habits to deliver targeted product recommendations
Utilizing Big Data in the retail sector allows commercial businesses to analyze vast volumes of customer purchase records, browsing histories, and seasonal buying habits. Machine learning recommendation algorithms evaluate these consumer insights to generate personalized product suggestions, optimizing targeted marketing campaigns, improving customer retention, and boosting retail sales.

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97. (B) Guaranteeing that AI systems respect user privacy and operate transparently
Ethical AI guidelines emphasize that developers must construct algorithms that safeguard user privacy, protect personal data, and operate transparently. Responsible artificial intelligence engineering requires mitigating systemic bias, establishing accountability, and providing clear explanations regarding how automated decisions are made, thereby earning user trust and protecting fundamental rights.

98. (D) I, II, and III
Modern technological adoption drives multi-faceted employment shifts. Industrial automation displaces routine manufacturing jobs, while artificial intelligence development generates novel specialized roles in data science and ethical governance. To remain employable in evolving job markets, human workers must cultivate a commitment to continuous learning and technical upskilling.

99. (A) Automated fraud detection in credit card transactions
In the financial domain, Artificial Intelligence powered machine learning models monitor electronic transaction streams in real time to detect fraudulent behavior. By analyzing purchasing patterns, transaction locations, and user behavioral metrics, automated security systems identify suspicious credit card activities immediately, blocking unauthorized financial transactions and mitigating financial fraud.

100. (A) P-3, Q-4, R-1, S-2
General Artificial Intelligence describes broad cognitive capability across all human tasks. Narrow Artificial Intelligence restricts machine intelligence to executing a specific singular function. Machine Learning enables mathematical models to learn directly from data patterns, and Computer Vision focuses on interpreting and extracting information from visual input.

101. (A) Radio Frequency Identification
RFID stands for Radio Frequency Identification within modern electronic engineering and Internet of Things logistics. This wireless tracking technology uses electromagnetic radio fields to read digital data stored on microchip tags attached to physical objects, enabling automated inventory tracking, asset management, and

121. (D) The capacity of a system to execute operations independently without human guidance
In robotics and artificial intelligence, Autonomous describes the ability of a machine or software system to execute operational tasks independently without direct human intervention or real-time control. Autonomous systems evaluate environmental sensor inputs, make logical decisions, and perform physical or computational actions self-sufficiently within complex operational environments.

122. (A) Maintaining data remotely on internet servers managed by cloud providers as a service
Cloud Storage is a service model where digital data is transmitted and saved on remote cloud servers managed by external hosting providers. Rather than storing files locally on physical hard drives, users upload, manage, and access data securely over the internet, enabling remote accessibility, automated backups, and flexible capacity.

123. (B) Assessing if a machine demonstrates intelligence indistinguishable from a human
Introduced by Alan Turing in 1950, the Turing Test evaluates whether a computer system can demonstrate human-equivalent cognitive intelligence. During the test, a human judge engages in text conversations with an unseen machine and human. If the evaluator cannot reliably distinguish the machine from the human, the machine passes.

124. (B) The degree of trustworthiness, accuracy, and reliability of data
Within Big Data dimensions, Veracity describes the accuracy, trustworthiness, and overall data quality of collected information. Because big data sets incorporate diverse sources containing noise, missing values, or biases, evaluating veracity is critical to ensure analytical models generate valid, reliable predictions for sound business decision making.

125. (A) II, IV, I, III
A standard data analytics workflow follows a methodical sequence. Raw information is first gathered during data collection and formatted during data cleaning and preprocessing. Next, analytical patterns are discovered during data analysis and modeling, culminating in strategic decision making and action based on extracted operational insights.

126. (C) Conversational AI virtual assistants
Automated phone systems that understand customer speech and resolve banking inquiries exemplify Conversational AI virtual assistants. Integrating natural language understanding, speech recognition, and automated response generation, these voice systems interpret natural human speech, retrieve account information, and deliver appropriate verbal responses without requiring human customer support agents.

127. (D) Robotics
Robotics is the specific branch of engineering and computational science dedicated to building physical machines capable of moving, manipulating objects, assembling parts, and conducting physical labor autonomously or semi-autonomously. It combines mechanical design, sensor integration, electronic control systems, and artificial intelligence algorithms to automate physical operations.

128. (C) They routinely gather personal user data, creating risks of privacy leaks or hacking
Privacy advocates highlight major concerns regarding smart home Internet of Things deployment due to continuous data collection. Connected smart cameras, voice assistants, and sensors gather sensitive personal user habits, daily routines, and audio streams, introducing vulnerabilities to cyberattacks, unauthorized surveillance, and data security breaches if inadequately protected.

129. (B) Utilizing computer vision to identify weeds and direct targeted herbicide application
Artificial Intelligence transforms weed management in modern agriculture through computer vision and machine learning models. High-resolution smart sprayers analyze crop fields in real time, accurately distinguishing invasive weeds from healthy crops. This precise identification directs targeted herbicide spraying onto specific weeds, dramatically reducing chemical usage and farming costs.

130. (D) The computational identification and categorization of text opinions to determine emotional tone
Sentiment Analysis is a natural language processing technique used to evaluate electronic text and determine its underlying emotional tone or opinion polarity. Algorithms analyze customer reviews, social media posts, and feedback

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111. (D) Adversarial Attack
An Adversarial Attack refers to a technique in machine learning security where malicious actors deliberately craft subtle, altered input perturbations to trick artificial intelligence models into making classification errors. These intentional data manipulations cause neural networks to misinterpret visual images, text, or signals without causing obvious visual defects to humans.

112. (C) Cloud Storage
The DigiLocker initiative implemented by the Government of India is built on Cloud Storage infrastructure. It provides digital storage space where citizens store, access, and share official government-issued electronic documents securely over internet platforms, eliminating physical paper documentation while ensuring seamless document verification and administrative efficiency.

113. (B) To inspect and filter network traffic based on configured security rules
In an Internet of Things network, a Firewall serves as an essential cybersecurity defense mechanism that monitors, inspects, and filters inbound and outbound network data traffic based on predefined security rules. Firewalls safeguard connected smart devices against unauthorized access attempts, external network intrusions, malware infections, and malicious cyberattacks.

114. (D) An open-source framework for distributed storage and processing of large datasets
Apache Hadoop is a popular open-source software framework designed specifically for storing and processing massive Big Data sets across distributed computer clusters. Utilizing distributed file systems and MapReduce processing models, Hadoop delivers scalable data storage, parallel processing power, high fault tolerance, and cost-effective big data analytics for organizations worldwide.

115. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Deepfakes represent a significant threat to information credibility and individual security. This threat stems directly from their reliance on advanced generative artificial intelligence models, which create hyper-realistic yet entirely fabricated video and voice content, enabling malicious actors to spread targeted disinformation, impersonate individuals, and manipulate digital media.

116. (C) Digital India
Digital India is a flagship government campaign launched to transform the nation into a digitally empowered society and knowledge economy. The initiative focuses on enhancing digital infrastructure, expanding high-speed internet connectivity, promoting cloud storage adoption, and integrating artificial intelligence and internet of things technologies across public and civic services.

117. (A) A relational database table containing structured records arranged in rows and columns
Structured Data refers to information formatted and organized within rigid tabular models, such as relational database tables structured into clearly defined rows and columns. This organized format allows software applications to search, query, index, and analyze records efficiently using standard database querying languages like SQL without extensive preprocessing.

118. (D) Reinforcement Learning
Reinforcement Learning is a machine learning technique where autonomous agents learn decision making through trial and error within a dynamic environment. The algorithm takes sequential actions, receiving numerical rewards for favorable outcomes or penalties for errors, thereby optimizing its operational strategy over time to maximize total cumulative rewards.

119. (B) IoT and Machine Learning
A smart thermostat adjusting room temperatures based on learned user arrival patterns demonstrates the integration of the Internet of Things and Machine Learning. The physical device utilizes internet connectivity and climate sensors to gather usage data, while machine learning algorithms analyze historical routines to automate home climate adjustments.

120. (A) I and II only
Artificial Intelligence powers routine everyday software applications, including automated spam filters that isolate malicious email messages and personalized algorithm recommendation feeds on social media platforms. Claiming AI cannot support navigation applications like Google Maps is incorrect, as navigation software relies heavily on machine learning for traffic predictions.

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demands fairness, equity, and the elimination of discriminatory algorithmic outcomes.

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CHAPTER 18

India's Achievements in the Technology Sector

1. The Digital India programme, a flagship initiative of the Government of India, was officially launched in which year?
(A) 2014
(B) 2015
(C) 2016
(D) 2017

2. How many unique digits make up an Aadhaar number issued by the Unique Identification Authority of India?
(A) 10
(B) 12
(C) 14
(D) 16

3. What is the full form of UPI in the context of India's digital payment system?
(A) Universal Payment Interface
(B) Unified Processing Interface
(C) Unified Payments Interface
(D) Universal Processing Interface

4. Which organization is primarily responsible for the development and management of the UPI platform in India?
(A) National Payments Corporation of India (NPCI)
(B) Reserve Bank of India (RBI)
(C) National Informatics Centre (NIC)
(D) State Bank of India (SBI)

5. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Aadhaar system ensures that no two individuals can have the same Aadhaar number.
Reason (R): Aadhaar relies on core biometric data, such as fingerprints and iris scans, for deduplication.
Select the correct answer from the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

6. What is the primary objective of the BharatNet project?
(A) To provide free smartphones to rural citizens
(B) To launch communication satellites for internet access
(C) To connect all Gram Panchayats in India with high-speed broadband
(D) To provide direct cash transfers to farmers

7. The BharatNet project was earlier known by which of the following names?
(A) Digital Rural Network Initiative (DRNI)
(B) Gramin Broadband Internet Scheme (GBIS)
(C) Bharat Rural Connectivity Plan (BRCP)
(D) National Optical Fibre Network (NOFN)

8. Which of the following is considered the first supercomputer developed indigenously in India?
(A) PARAM 8000
(B) PARAM Shivay
(C) Pratyush
(D) Mihir

9. India's IT service industry is globally recognized primarily for which of the following models?
(A) Hardware manufacturing and assembly services
(B) Global Delivery Model for software services
(C) Semiconductor fabrication and microchip design
(D) Rare earth material extraction and mining

10. Which government platform serves as a unified mobile application allowing citizens to access multiple central and state government services?
(A) BHIM
(B) UMANG
(C) SWAYAM
(D) e-NAM

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11. Which biometric features are captured for the generation of an Aadhaar card?
(A) Fingerprints and iris scans
(B) Voice print and facial recognition
(C) DNA mapping and fingerprints
(D) Iris scans and retina scans

12. Match List I with List II and select the correct answer using the codes given below:
List I: (Initiative)
P. DIKSHA
Q. e-NAM
R. BHIM
S. Ayushman Bharat Digital Mission
List II: (Target Sector)
1. Agriculture
2. Digital Payments
3. Education
4. Healthcare
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

13. The PARAM series of supercomputers in India is developed by which institution?
(A) Indian Space Research Organisation (ISRO)
(B) Defence Research and Development Organisation (DRDO)
(C) Indian Institute of Science (IISc)
(D) Centre for Development of Advanced Computing

14. Which document was published by NITI Aayog to outline India's national strategy for Artificial Intelligence?
(A) AI for India
(B) Digital AI Mission
(C) AI for All
(D) Smart India AI

15. What is the full form of C-DAC?
(A) Centre for Digital Applications and Computer Systems
(B) Centre for Development of Advanced Computing
(C) Council for Development of Applied Computing Systems
(D) Centre for Digital and Analog Computing Systems

16. In which Indian city is the headquarters of C-DAC located?
(A) Bengaluru
(B) Hyderabad
(C) Chennai
(D) Pune

17. The primary purpose of the Startup India initiative is to:
(A) Foster entrepreneurship and innovation
(B) Provide direct government jobs to unemployed rural youth
(C) Subsidize heavy agricultural equipment for small farmers
(D) Distribute free laptops and tablets to high school students

18. Consider the following statements regarding the PARAM series of supercomputers:
I. PARAM 8000 was developed in 1991.
II. The development of PARAM was an indigenous effort led by C-DAC.
III. PARAM series supercomputers are exclusively used for playing digital games.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

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19. According to NITI Aayog's strategy, which of the following is NOT identified as a core sector for AI application in India?
(A) Deep-sea mining
(B) Public healthcare and medical diagnostics
(C) Sustainable agriculture and crop management
(D) Primary and higher education systems

20. Which mobile application was launched by the Government of India to promote digital payments based on the Unified Payments Interface (UPI)?
(A) UMANG
(B) DigiLocker
(C) e-Rupi
(D) BHIM

21. Which digital payment method allows for money transfer without revealing bank account details, using only a Virtual Payment Address (VPA)?
(A) NEFT
(B) UPI
(C) RTGS
(D) IMPS

22. What was the name of India's first successful interplanetary mission launched by ISRO?
(A) Chandrayaan-1 (Lunar Exploration Mission)
(B) Gaganyaan (Human Spaceflight Programme)

92. Which government portal in Uttar Pradesh allows citizens to track the status of their grievances online?
(A) UP Agriculture
(B) UP Police App
(C) UP Jansunwai (IGRS)
(D) UP Transport Portal

93. Select the correct sequence representing the evolution of mobile telecommunication technologies from oldest to newest:
(A) 2G → 3G → 4G → 5G
(B) 2G → 3G → 4G → 5G
(C) 3G → 2G → 4G → 5G
(D) 4G → 3G → 2G → 5G

94. What does the "S" in HTTPS stand for?
(A) System
(B) Server
(C) Secure
(D) Standard

95. What is the full form of NPCI?
(A) National Processing Center of Information and Services
(B) National Payments Corporation of India
(C) Network Provider Infrastructure Corporation of India
(D) National Online Portal for Citizen Information Services

96. Which Indian IT company became the first to reach a market capitalization of $100 billion?
(A) Infosys Technologies Limited
(B) Wipro Enterprise Solutions
(C) HCL Technologies Corporation
(D) Tata Consultancy Services

97. The concept of "Internet of Things" (IoT) refers to:
(A) Physical objects connected via sensors exchanging data
(B) A specialized web search engine built specifically for discovering physical items online
(C) The commercial platform and process used for ordering retail physical goods over the internet
(D) A dedicated hardware-level antivirus software designed to safeguard computer processing units

98. Which of the following best describes "Artificial Intelligence" (AI)?
(A) The physical manufacturing and mechanical assembly process of industrial service robots
(B) A highly secure cryptographic protocol used to transmit sensitive data across public networks
(C) Machine simulation of human intelligence
(D) An early high-level programming language that is no longer supported on modern computers

99. The "Digital India Bhashini" platform aims to build a national public digital platform for which specific purpose?
(A) AI-based translation across Indian languages
(B) To provide free high-speed broadband access to all rural and urban citizens
(C) To create digital three-dimensional models of all national historical monuments
(D) To actively detect and monitor national cyber security threats in real-time

100. Consider the following pillars of the Digital India programme:
I. Broadband Highways
II. Universal Access to Mobile Connectivity
III. e-Kranti (Electronic Delivery of Services)
IV. Early Harvest Programmes
Which of the above statement(s) is/are correct?
(A) I and III only
(B) I, II, and III only
(C) II, III, and IV only
(D) I, II, III, and IV

101. Which shortcut key in Microsoft PowerPoint is used to start a presentation from the beginning?
(A) F1
(B) F5
(C) Shift + F5
(D) F12

102. In Microsoft Excel, a formula always begins with which symbol?
(A) +
(B) -
(C) =
(D) *

103. Which memory unit is the smallest among the following?
(A) Kilobyte (KB)
(B) Megabyte (MB)
(C) Byte
(D) Nibble

104. Which of the following is an example of a proprietary operating system?

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33. The National Cyber Security Coordinator in India functions under which of the following bodies?
(A) National Security Council Secretariat
(B) Reserve Bank of India Financial Security Cell
(C) NITI Aayog Cyber Security Task Force
(D) Telecom Regulatory Authority of India (TRAI)

34. Which government agency serves as the national nodal agency for responding to computer security incidents as they occur?
(A) NASSCOM
(B) C-DAC
(C) CERT-In
(D) STPI

35. The 'Make in India' initiative significantly boosted electronics manufacturing through which specific scheme designed to give financial incentives based on incremental sales?
(A) Production Linked Incentive (PLI) Scheme
(B) Mahatma Gandhi National Rural Employment Guarantee Scheme
(C) Pradhan Mantri MUDRA Yojana for Micro Units
(D) Pradhan Mantri Kisan Samman Nidhi Scheme

36. DIKSHA is a national digital infrastructure related to which field?
(A) Outer space exploration and satellite technology
(B) Indigenous defence equipment manufacturing
(C) Direct agricultural financial subsidies
(D) School education and training

37. Which unique digital ID is created for citizens under the Ayushman Bharat Digital Mission (ABDM)?
(A) PAN Card
(B) ABHA Number
(C) UAN Number
(D) PRAN Number

38. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): India holds a leading global position in the volume of real-time digital payments.
Reason (R): The widespread adoption of the UPI system has enabled instant mobile-based transactions at scale.
Select the correct answer from the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

39. How many digits are present in an ABHA (Ayushman Bharat Health Account) number?
(A) 10
(B) 12
(C) 14
(D) 16

40. What is the full form of STPI?
(A) Software Technology Parks of India
(B) State Technology Parks of India
(C) Scientific Training Platforms of India
(D) System Technology Parks of India

41. DRDO plays a critical role in India's technological achievements primarily in which sector?
(A) Sustainable agriculture and farming technology
(B) Defence and aerospace
(C) Public healthcare and medical research
(D) Primary and secondary education

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42. The National Quantum Mission (NQM) was approved in India in which year to scale up scientific and industrial R&D in quantum technologies?
(A) 2015
(B) 2019
(C) 2023
(D) 2010

43. Which of the following best defines "Quantum Computing"?
(A) Computing using qubits and quantum principles
(B) Computing that processes data using classical binary bits exclusively
(C) A specialized physical network topology used in Local Area Networks
(D) A newly designed multi-user operating system developed by C-DAC

44. What is the primary function of DigiLocker in the Indian e-Governance ecosystem?
(A) To remotely track and lock mobile devices if lost or stolen
(B) To serve as an automated antivirus program

67. Which of the following file extensions is commonly associated with a Microsoft Excel workbook?
(A) .xlsx
(B) .docx
(C) .pptx
(D) .txt

68. What is the full form of DIKSHA in the context of India's digital education initiatives?
(A) Digital India Knowledge and Study Hub
(B) Distance Internet Knowledge System for Higher Academics
(C) Digital Institute of Knowledge and Science Handling
(D) Digital Infrastructure for Knowledge Sharing

69. Which type of malware is designed to demand money from a user in exchange for unlocking their encrypted files?
(A) Spyware
(B) Ransomware
(C) Adware
(D) Trojan Horse

70. What is a "Firewall" in a computer network?
(A) A specialized fireproof structural wall built around server facilities for safety
(B) A dedicated system software used exclusively for formatting and burning optical discs
(C) A system monitoring network traffic
(D) A destructive computer virus designed to permanently erase all user files from a drive

71. The "Cloud Storage" facility provided by the Government of India via DigiLocker allows users to:
(A) Generate clean electricity using renewable cloud power systems
(B) Predict seasonal monsoon rainfall across regions accurately
(C) Download and access open-source software for video editing
(D) Store authentic digital documents

72. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Make in India initiative has significantly increased the domestic manufacturing of mobile phones.
Reason (R): The government introduced the Production Linked Incentive (PLI) scheme to offer financial benefits for local electronics manufacturing.
Select the correct answer from the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

73. Which network topology connects all nodes to a single central cable?
(A) Star Topology
(B) Bus Topology
(C) Ring Topology
(D) Mesh Topology

74. An IP address is primarily used for:
(A) Checking the spelling in a document
(B) Identifying a device on a network
(C) Increasing the processor speed
(D) Converting analog signals to digital signals

75. Which protocol is predominantly used for transferring web pages over the internet?
(A) HTTP
(B) FTP
(C) SMTP
(D) POP3

76. In an email system, what is the function of the BCC field?
(A) To visually mark the outgoing message as an urgent high-priority email
(B) To automatically compress large document attachments prior to sending
(C) To hide recipient addresses from others
(D) To apply cryptographic keys for end-to-end encryption of the email

77. Which of the following is considered a primary memory in a computer?
(A) Hard Disk Drive (HDD)
(B) Solid State Drive (SSD)
(C) Pen Drive
(D) Read-Only Memory (ROM)

78. Which of the following devices acts as both an input and an output device?
(A) Keyboard
(B) Monitor (Non-touch)
(C) Touchscreen Display
(D) Optical Mouse

79. Match List I with List II and select the correct answer using the codes given below:
List I: (Term)

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55. What is the full form of UIDAI?
(A) Unified Identity Database Authority of India
(B) Universal Identification Authority of India
(C) United Identity Agency of India
(D) Unique Identification Authority of India

56. Which of the following is a type of system software?
(A) Windows 11
(B) Microsoft Word
(C) Google Chrome
(D) Adobe Photoshop

57. Which feature of a computer ensures that once data is processed, it is kept safe for future retrieval?
(A) Input
(B) Storage
(C) Output
(D) Arithmetic logic

58. Arrange the following typical steps of making a UPI payment at a merchant in the correct sequential order:
I. Enter the UPI PIN.
II. Scan the merchant's QR code.
III. Open the UPI application.
IV. Enter the payment amount.
Select the correct sequence from the options below:
(A) III → II → IV → I
(B) II → III → I → IV
(C) III → IV → II → I
(D) II → I → III → IV

59. In the context of computer memory, what does RAM stand for?
(A) Random Access Memory
(B) Rapid Access System Memory
(C) Read Access Storage Memory
(D) Running Active Main Memory

60. 1 Gigabyte (GB) is equal to how many Megabytes (MB)?
(A) 1000 MB
(B) 1024 MB
(C) 1048 MB
(D) 1012 MB

61. Which of the following is an example of an open-source operating system?
(A) Windows 10
(B) macOS
(C) iOS
(D) Linux

62. The 'e-District' project in Uttar Pradesh is primarily designed to provide:
(A) Construction of high-speed railway networks connecting neighboring rural districts
(B) Distribution of free personal computers and laptops to students at district headquarters
(C) Online delivery of district citizen services
(D) Modernization of physical infrastructure and office space for local district courts

63. Phishing is a type of cybercrime that involves:
(A) Unauthorized physical modification of computer internal hardware components to extract stolen data
(B) Tricking users into sharing sensitive personal data
(C) Accidental or deliberate physical damage to underground optical fibre networks using heavy machinery
(D) Transmitting excessive ping requests to overload a server and shut down network services completely

64. Which device is used to connect multiple computers within a Local Area Network (LAN)?
(A) Modem
(B) CPU
(C) Hard Drive
(D) Switch

65. Consider the following statements regarding the BharatNet project:
I. It is fully funded by the Universal Service Obligation Fund (USOF).
II. It aims to connect all Gram Panchayats with broadband.
III. It uses purely satellite-based communication without physical cables.
IV. It is executed by Bharat Broadband Network Limited (BBNL).
Which of the above statement(s) is/are correct?
(A) I, II, and IV only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

66. In MS Word, what is the shortcut key to paste copied text?
(A) Ctrl + P
(B) Ctrl + C
(C) Ctrl + V
(D) Ctrl + X

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(C) Mangalyaan (Mars Orbiter Mission)
(D) Aditya-L1 (Solar Space Observatory)

23. India became the first country in the world to land a spacecraft near the lunar south pole. Which mission achieved this milestone?
(A) Chandrayaan-1
(B) Chandrayaan-2
(C) Mangalyaan-2
(D) Chandrayaan-3

24. Choose the correct chronological sequence of the launch of the following Indian initiatives from the options given below:
(A) Digital India → Startup India → 5G Launch in India
(B) Startup India → Digital India → 5G Launch in India
(C) 5G Launch in India → Digital India → Startup India
(D) Digital India → 5G Launch in India → Startup India

25. The commercial roll-out of 5G services in India was officially launched in which month and year?
(A) January 2021
(B) August 2021
(C) October 2022
(D) March 2023

26. Which underlying technology gives 5G networks their significant advantage in speed and reduced latency compared to 4G?
(A) Optical fibre backbone network routing
(B) Millimetre wave frequencies
(C) High-frequency analog signal transmission
(D) Advanced dial-up modulation techniques

27. What is the full form of SWAYAM, the Indian government's portal for online education?
(A) Study Webs of Active-Learning for Young Aspiring Minds
(B) Study World of Academic Youth and Minds Educational Portal
(C) Student Web of Active Yields and Mentorship Platform
(D) System for Wide Academic and Youth Active Mentoring Network

28. Which nodal ministry oversees the India Semiconductor Mission (ISM)?
(A) Ministry of Heavy Industries and Public Enterprises
(B) Ministry of Science and Technology, Government of India
(C) Ministry of Electronics and Information Technology
(D) Ministry of Defence, Government of India

29. The concept of "AgriStack" in the Digital Agriculture Mission primarily refers to:
(A) A network of physical government warehouses for grain storage
(B) A newly developed variety of high-yield climate-resilient seeds
(C) An advanced mechanical harvester produced indigenously in India
(D) A digital ecosystem combining agricultural data

30. Which of the following is a key feature of the e-NAM platform?
(A) It functions as an online portal providing educational courses for farmers
(B) It accurately predicts regional weather changes using supercomputers
(C) It creates a unified national agricultural market
(D) It distributes free tractors and machinery to rural panchayats

31. Consider the following statements regarding ISRO's space missions:
I. Chandrayaan-3 successfully landed on the lunar surface in 2023.
II. Mangalyaan was launched to study the atmosphere of Mars.
III. Aditya-L1 is India's first dedicated solar mission.
IV. Gaganyaan aims to send Indian astronauts to the Moon.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

32. What is the main objective of setting up Software Technology Parks of India (STPI)?
(A) To establish facilities for manufacturing computer hardware
(B) To train primary school children in basic computer literacy
(C) To strictly monitor and regulate public social media content
(D) To promote the export of software from India

NODIA

P. eSign
Q. ONDC
R. NKN
S. UPI

List II: (Description)
1. Open network for digital commerce
2. High-speed network for educational institutes
3. Digital signature service
4. Instant real-time payment system

(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-1, R-4, S-3

80. Identify the odd one out among the following web browsers.
(A) Google Chrome
(B) Mozilla Firefox
(C) Microsoft Edge
(D) Bing

81. In the binary number system, what are the only two digits used?
(A) 1 and 2
(B) 0 and 1
(C) 0 and 9
(D) A and B

82. What is the full form of BHIM, the digital payment application?
(A) Bharat High-speed Internet Medium
(B) Broad Help for Internet Money
(C) Bharat Interface for Money
(D) Bank Highway Interface for Money

83. The main electronic component used in first-generation computers was:
(A) Vacuum Tubes
(B) Transistors
(C) Integrated Circuits (ICs)
(D) Microprocessors

84. Which functional unit of the CPU is responsible for performing mathematical operations and logical comparisons?
(A) Central Control Unit Division
(B) High-Speed Processor Registers
(C) Internal CPU Cache Memory
(D) Arithmetic Logic Unit

85. The "Semiconductor Mission" of India primarily aims to establish the country as a global hub for:
(A) Commercial textile design and industrial garment manufacturing
(B) Semiconductor and electronics production
(C) Custom software application development and enterprise coding
(D) Lithium-ion electric vehicle battery processing and recycling

86. Consider the following statements regarding CERT-In:
I. It stands for Computer Emergency Response Team - India.
II. It is the national nodal agency for responding to computer security incidents.
III. It was established under the Information Technology Act.

Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

87. A database consists of rows and columns. In database terminology, a single row representing a single entity is called a:
(A) Field
(B) Table
(C) Primary Key
(D) Record

88. Which of the following is NOT a characteristic of a "Primary Key" in a database table?
(A) It can contain NULL values.
(B) It must uniquely identify each record.
(C) A table can have only one primary key.
(D) It prevents duplicate records.

89. When a computer is turned on, the process of loading the operating system into RAM is called:
(A) Compiling
(B) Booting
(C) Formatting
(D) Debugging

90. Which of the following is a non-volatile memory?
(A) Cache Memory
(B) ROM
(C) Virtual Memory
(D) RAM

91. The term "URL" in the context of the internet stands for:
(A) Uniform Resource Locator
(B) Universal Routing Link
(C) Unified Resource Line
(D) Universal Record Locator

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for government systems
(C) To securely store and verify digital documents
(D) To enable instant online reservation and booking of railway tickets

45. Match List I with List II and select the correct answer using the codes given below:
List I: (Technology/Initiative)
P. Aadhaar
Q. BHIM
R. SWAYAM
S. PARAM
List II: (Key Association/Function)
1. Supercomputing
2. Massive Open Online Courses (MOOCs)
3. Biometric Identity
4. UPI Payments
(A) P-3, Q-4, R-2, S-1
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-2, R-4, S-1
(D) P-2, Q-4, R-3, S-1

46. Which term is used to describe the collection of open APIs and digital public goods that form the digital infrastructure of India (like Aadhaar, UPI, DigiLocker)?
(A) India Cloud
(B) Bharat Network
(C) India Stack
(D) Digital Hub India

47. Which of the following is an Indian government initiative aimed at breaking the language barrier using Artificial Intelligence?
(A) Vani
(B) Bhashini
(C) Shabd
(D) BhashaNet

48. What is the primary function of a "Jan Suvidha Kendra" (Common Service Centre) in Uttar Pradesh and other states?
(A) To distribute and sell subsidized agricultural fertilizers to farmers
(B) To offer free primary health checkups and medical consultations
(C) To act as an offline extension branch of the Reserve Bank of India
(D) To deliver e-governance services in rural areas

49. The Information Technology Act, which provides legal recognition for transactions carried out by means of electronic data interchange, was enacted in India in which year?
(A) 1995
(B) 2000
(C) 2005
(D) 2008

50. Under the IT Act 2000, which section primarily deals with punishment for publishing or transmitting obscene material in electronic form?
(A) Section 43
(B) Section 65
(C) Section 67
(D) Section 66C

51. Which of the following is considered an input device in a computer system?
(A) Keyboard
(B) Dot matrix printer
(C) Computer monitor
(D) Audio speaker

52. Consider the following statements regarding the Ayushman Bharat Digital Mission (ABDM):
I. It aims to develop a unified digital health infrastructure in India.
II. Registration for an ABHA number is strictly mandatory for all Indian citizens.
III. It facilitates the secure exchange of digital health records with patient consent.
Which of the above statement(s) is/are incorrect?
(A) I only
(B) II only
(C) III only
(D) I and III only

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53. Which mobile application provides Indian citizens access to their digital driving license and vehicle registration certificate?
(A) e-RTO Portal
(B) mParivahan
(C) DriveIndia App
(D) VehicleNet India

54. What is meant by "e-Governance"?
(A) The large-scale manufacturing of electronic components for official government vehicles
(B) The systematic collection and recycling process of corporate electronic waste by state agencies
(C) Using ICT to deliver government services
(D) Automated sorting and organization of paper files in administrative offices using robotics

(A) Windows
(B) Ubuntu
(C) Fedora
(D) Android

105. What is a digital signature?
(A) A high-resolution electronic image file created by scanning a physical handwritten signature
(B) A cryptographic method validating document authenticity
(C) A digital graphic representation of a signature drawn manually using a stylus on a touch screen
(D) A unique multi-factor encrypted passcode required to authenticate and log into a user email account

106. In the context of computer architecture, the "bus" refers to:
(A) A heavy motor vehicle utilized by logistics companies to transport computer hardware inventory
(B) An internal channel transferring data between components
(C) The primary electrical transformer unit that converts incoming power for computer components
(D) An active thermal management cooling device mounted directly on top of the central processor

107. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The establishment of Software Technology Parks of India (STPI) played a critical role in the growth of the Indian IT industry.
Reason (R): STPI provided single-window clearance, high-speed data communication facilities, and tax incentives for software exports.
Select the correct answer from the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

108. The basic function of a DNS (Domain Name System) server is to:
(A) Automatically scan and filter all incoming email attachments for computer viruses
(B) Monitor and block unauthorized external network connections to a private server
(C) Translating domain names into IP addresses
(D) Provide centralized web hosting services for storing website files and databases

109. What is the full form of NKN, a project aimed at connecting educational and research institutes in India?
(A) National Kisan Network
(B) New Knowledge Nodes
(C) Nationwide Knowledge Nexus
(D) National Knowledge Network

110. Which technology is primarily used to ensure the immutability and transparency of transactions, often associated with cryptocurrencies but also finding use in e-Governance?
(A) Artificial Intelligence
(B) Virtual Reality
(C) Blockchain
(D) Cloud Computing

111. Which organization developed the "RuPay" card scheme in India?
(A) Reserve Bank of India Central Banking Division
(B) National Payments Corporation of India
(C) State Bank of India Payments and Systems Department
(D) NITI Aayog Financial Inclusion Task Force

112. "Param 8000", "Param Padma", and "Param Shivay" belong to which category of technological achievements in India?
(A) Earth Observation Satellites
(B) Nuclear Submarines
(C) Anti-tank Missiles
(D) Supercomputers

113. The Open Network for Digital Commerce (ONDC) is an initiative by the Indian government aimed at:
(A) Democratizing e-commerce through an open network model
(B) Establishing a government-owned public entity to directly compete with Amazon and Flipkart
(C) Restricting and prohibiting all international commercial e-commerce websites operating in India
(D) Supplying free high-speed public internet connections strictly designated for online shopping

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Technology. It aims to transcend language barriers by leveraging natural language processing, speech recognition, and machine translation technologies to build digital services and educational content accessible in diverse regional Indian languages.

48. (D) To deliver e-governance services in rural areas
Common Service Centres, also functioning as Jan Suvidha Kendras, serve as access points for delivering essential e-governance and public utility services in rural regions. Operating under the Digital India framework, these physical service hubs enable citizens without personal internet access to apply for government certificates, social welfare schemes, and utility bill payments locally.

49. (B) 2000
The Information Technology Act, 2000 was enacted by the Parliament of India in May 2000 and came into force in October 2000. It provides legal recognition for electronic transactions, digital signatures, and e-commerce records while establishing statutory penalties for cybercrimes and network breaches to maintain cybersecurity across digital platforms.

50. (C) Section 67
Section 67 of the Information Technology Act, 2000 provides legal penalties for publishing, transmitting, or causing to be published in electronic form any material that is lascivious or appeals to the prurient interest. It mandates imprisonment and monetary fines for individuals found guilty of distributing obscene content across digital networks.

51. (A) Keyboard
A keyboard is an essential hardware input device used to enter alphanumeric characters, symbols, and operational commands into a computer system. It converts physical key presses into electronic signals that the CPU processes, enabling users to type text, interact with software applications, and control various system functions directly.

52. (B) II only
The Ayushman Bharat Digital Mission seeks to create a national digital health framework and allows secure, consent-based sharing of medical records. However, creating an ABHA number remains completely voluntary for citizens rather than mandatory. Consequently, the assertion claiming compulsory registration represents an incorrect statement regarding the healthcare digital mission structure.

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53. (B) mParivahan
mParivahan is an official mobile application developed by the Ministry of Road Transport and Highways. It provides citizens with instant access to digital vehicle registration certificates, driving licenses, and transport utilities. Documents stored within mParivahan hold legal validity equivalent to physical document cards across traffic enforcement checks in India.

54. (C) Using ICT to deliver government services
e-Governance refers to the application of Information and Communication Technology to deliver government services, exchange operational data, and communicate administrative policies to citizens and businesses efficiently. It enhances administrative transparency, reduces operational delays, minimizes physical paperwork, and expands public accessibility to government welfare programs and regulatory services across the nation.

55. (D) Unique Identification Authority of India
UIDAI stands for Unique Identification Authority of India. Established as a statutory authority under the Aadhaar Act 2016, it operates under the Ministry of Electronics and Information Technology. UIDAI is tasked with issuing unique 12-digit Aadhaar numbers and maintaining demographic and biometric database records for Indian residents securely.

56. (A) Windows 11
Windows 11 is an operating system categorized as system software because it directly controls hardware resources and manages core system processes. Application software such as Microsoft Word, Google Chrome, and Adobe Photoshop depend entirely on the underlying system software environment provided by the operating system to perform specific user tasks.

57. (B) Storage
The storage feature of a computer system ensures that processed data, documents, applications, and operating system software are retained safely in memory media for long-term retrieval. Utilizing non-volatile secondary storage components like

125. What is the full form of ABDM?
(A) Advanced Bharat Digital Healthcare Mission
(B) All Bharat Digital Medicine Platform
(C) Ayush Board of Digital Medicine System
(D) Ayushman Bharat Digital Mission

126. Which type of software is an Antivirus program?
(A) Application Software
(B) Firmware
(C) Utility Software
(D) Operating System

127. The term "ISP" in the context of the internet stands for:
(A) Internal System Protocol
(B) Internet Service Provider
(C) Intranet Security Provider
(D) Information Server Protocol

128. Consider the following statements regarding India's IT and ITES sector:
I. It is one of the largest employers in the organized private sector in India.
II. It contributes significantly to India's total exports.
III. It relies heavily on the Global Delivery Model.
IV. Its primary export destination is the European Union, ahead of the USA.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

129. The term "Big Data" refers to:
(A) Extremely large or complex datasets
(B) A single individual data file that measures exactly one terabyte in total storage size
(C) The array of physical hard disk drives connected inside modern supercomputing networks
(D) A high-speed fiber-optic broadband internet connection deployed for enterprise businesses

130. A computer virus that actively copies itself and spreads across networks without needing to attach to a host program is technically called a:
(A) Trojan
(B) Spyware
(C) Worm
(D) Rootkit

131. Which feature in MS Excel allows you to automatically sum a selected range of cells?
(A) AutoSum
(B) AutoCalculate
(C) QuickMath
(D) SigmaTotal

132. The smallest unit of data in a computer is a:
(A) Byte
(B) Nibble
(C) Pixel
(D) Bit

133. In the context of computer security, what is the purpose of "Encryption"?
(A) To compress and archive large document files to save local disk storage space
(B) To encode data against unauthorized access
(C) To permanently erase and overwrite sensitive user files from the hard drive
(D) To thoroughly scan local computer system storage for malware infection threats

134. Which Indian supercomputer facility was recognized globally by placing in the top 500 list of most powerful supercomputers, prominently installed at IIT-Mandi?
(A) PARAM Siddhi-AI
(B) PARAM Ganga
(C) PARAM Himalaya
(D) PARAM Brahma

135. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The National Quantum Mission aims to make India a leading nation in quantum technology development.
Reason (R): Quantum computing relies exclusively on classic binary bits (0s and 1s) to achieve superior processing speeds.
Select the correct answer from the codes given below:
(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
(B) Both Assertion (A) and Reason (R) are true but R is not the correct explanation of A.
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

136. Which of the following best defines "Cloud Computing"?
(A) Delivering computing services over the internet
(B) Utilizing atmospheric meteorology sensor data to accurately predict upcoming weather patterns

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114. Match List I with List II and select the correct answer using the codes given below:
List I: (ISRO Mission)
P. Chandrayaan-3
Q. Mangalyaan
R. Gaganyaan
S. Aditya-L1
List II: (Objective)
1. Human Spaceflight
2. Solar Observation
3. Lunar Exploration
4. Mars Orbiting
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-1, Q-2, R-3, S-4

115. A "Trojan Horse" in computer security refers to:
(A) Malware disguised as a legitimate program
(B) An encrypted network communication protocol utilized exclusively for safe web browsing
(C) A dedicated auxiliary hardware processing unit installed to accelerate system computing speed
(D) An automated security application software that detects and erases computer worms continuously

116. Which Indian initiative aims to promote domestic production of Electronic Components and Semiconductors?
(A) Pradhan Mantri Jan Dhan Yojana Financial Inclusion Programme
(B) National Skill India Mission for Youth Workforce Development
(C) Stand-Up India Scheme for Greenfield Entrepreneurship Growth
(D) SPECS scheme for electronic components manufacturing

117. The 'Ctrl + Z' keyboard shortcut in most Windows applications is used to:
(A) Redo the last action
(B) Undo the last action
(C) Save the document
(D) Close the active window

118. Which of the following is considered an optical storage device?
(A) Magnetic Tape
(B) Floppy Disk
(C) CD-ROM
(D) USB Flash Drive

119. A network that spans across a large geographical area, such as a country or the entire globe, is called a:
(A) LAN
(B) MAN
(C) PAN
(D) WAN

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120. In MS Word, the feature used to apply a specific format (like font, size, and color) from one part of a document to another is called:
(A) Format Painter
(B) Document Style Copier
(C) Text Attribute Cloner
(D) Automatic Text Formatting

121. Consider the following statements regarding the SWAYAM platform:
I. It provides online certification courses for students across India.
II. Access to the video lectures and reading material on SWAYAM is free of cost.
III. It only provides courses related to advanced medical science.
Which of the above statement(s) is/are correct?
(A) I and II only
(B) II and III only
(C) I and III only
(D) I, II, and III

122. Which port is typically used to connect a standard wired computer mouse or keyboard in modern PCs?
(A) VGA Port
(B) USB Port
(C) HDMI Port
(D) Ethernet Port

123. Under India's Digital Agriculture Mission, farmers are provided with a unique identifier database. What is this ecosystem commonly called?
(A) AgriStack
(B) FarmNet
(C) KisanWeb
(D) CropCloud

124. Which Indian state was the first to implement the e-District project extensively to digitize citizen services at the district level?
(A) State of Kerala
(B) State of Gujarat
(C) Uttar Pradesh
(D) State of Maharashtra

ANSWERS

1. (B) 2015
The Digital India programme was officially launched by the Government of India on July 1, 2015. It was envisioned as an umbrella flagship initiative to transform the country into a digitally empowered society and a knowledge economy. The scheme focuses on improving online infrastructure, enhancing digital literacy, and ensuring seamless electronic service delivery.

2. (B) 12
An Aadhaar number is a unique 12-digit random identification number issued by the Unique Identification Authority of India to residents after satisfying a verification process. It serves as proof of identity across India and is generated using demographic details alongside biometric features like fingerprints and iris scans to eliminate duplicate identities in government systems.

3. (C) Unified Payments Interface
Unified Payments Interface is an instant real-time payment system developed by the National Payments Corporation of India. It facilitates inter-bank peer-to-peer and person-to-merchant transactions through a simplified mobile interface. By integrating multiple bank accounts into a single mobile application, it enables effortless money transfers using unique virtual addresses without disclosing underlying banking details.

4. (A) National Payments Corporation of India (NPCI)
The National Payments Corporation of India is the specialized organization responsible for operating retail payments and settlement systems across the nation. Formed as an initiative of the Reserve Bank of India and Indian Banks' Association, it engineered and manages the Unified Payments Interface platform to build a robust, digital payment infrastructure.

5. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
The Aadhaar system guarantees uniqueness because no two individuals receive the same identification number. This strict uniqueness is achieved through de-duplication algorithms that cross-check captured core biometric data, including ten fingerprints and two iris scans, against existing records. Therefore, biometric uniqueness directly ensures that duplicate or fake identities cannot be generated within the system database.

6. (C) To connect all Gram Panchayats in India with high-speed broadband
The BharatNet project aims to connect all Gram Panchayats across the country by establishing a high-speed optical fibre network. Designed as a foundational digital communication network, it seeks to deliver non-discriminatory broadband connectivity to rural areas, enabling affordable access to e-governance, e-health, e-education, and digital financial services for all rural citizens.

7. (D) National Optical Fibre Network (NOFN)
The BharatNet project was originally launched in October 2011 as the National Optical Fibre Network. It was later rebranded as BharatNet in 2015 with expanded scope and revised implementation strategies. The project provides scalable optical fibre connectivity to rural local bodies, bridging the digital divide between urban centers and remote rural communities nationwide.

8. (A) PARAM 8000
PARAM 8000 is widely recognized as the first supercomputer developed indigenously in India. Unveiled in 1991 by the Centre for Development of Advanced Computing under the leadership of Dr. Vijay Bhatkar, it was built following technology export restrictions. Its creation established India's capabilities in high-performance parallel computing technology on a global scale.

9. (B) Global Delivery Model for software services
India's IT service industry achieved global recognition primarily through the pioneering implementation of the Global Delivery Model. This business model divides software development projects into components executed onshore at client sites and offshore at Indian technology centers. It optimizes costs, ensures high-quality

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ecosystem to secure long-term technological independence.

29. (D) A digital ecosystem combining agricultural data
AgriStack is a foundational digital framework developed under the Digital Agriculture Mission. It integrates fragmented agricultural data by creating digital registries for farmers, crop land details, and geographic mapping. This unified digital ecosystem enables government agencies and service providers to deliver targeted agricultural advisory, credit access, insurance, and policy benefits directly.

30. (C) It creates a unified national agricultural market
The National Agriculture Market, known as e-NAM, is a pan-India electronic trading portal that networks existing Agricultural Produce Market Committee mandis. By creating a unified national market for agricultural commodities, it promotes transparent online bidding, removes spatial informational asymmetries, and enables farmers to access wider markets and competitive prices for produce.

31. (A) I, II, and III only
Chandrayaan-3 achieved a successful lunar soft landing in 2023, while Mangalyaan was sent to analyze the Martian atmosphere. Aditya-L1 represents India's dedicated solar observation observatory. Gaganyaan aims to place human astronauts into Low Earth Orbit rather than on the Moon. Thus, statements regarding lunar landing, Mars observation, and solar study are accurate.

32. (D) To promote the export of software from India
Software Technology Parks of India was established in 1991 as an autonomous society under the Ministry of Electronics and Information Technology. Its primary mandate is to encourage, foster, and boost software exports from the nation by providing high-speed data communications infrastructure, single-window statutory clearances, and incubation facilities for IT startups.

33. (A) National Security Council Secretariat
The National Cyber Security Coordinator operates under the administrative framework of the National Security Council Secretariat in the Prime Minister's Office. This office coordinates with various national agencies, ministries, and stakeholders to formulate, oversee, and implement strategy guidelines for protecting critical information infrastructure against cyber threats across the country.

34. (C) CERT-In
The Indian Computer Emergency Response Team serves as the national nodal agency for managing cybersecurity emergencies under the Information Technology Act. Operating under the Ministry of Electronics and Information Technology, CERT-In collects, analyzes, and disseminates information on cyber threats, issues security alerts, and handles incident response for computer systems nationwide.

35. (A) Production Linked Incentive (PLI) Scheme
The Production Linked Incentive scheme was introduced to boost local electronics manufacturing under Make in India. It offers financial incentives directly tied to incremental sales manufactured locally in target segments. This initiative attracts large investments, builds domestic supply chain infrastructure, and enhances globally competitive manufacturing capabilities within the electronic device sector.

36. (D) School education and training
Digital Infrastructure for Knowledge Sharing is a national web portal and mobile application dedicated to school education. Initiated by the Ministry of Education, it provides teachers, students, and parents with interactive learning materials, digital textbooks, structured lesson plans, and professional training modules aligned with national curriculum guidelines across multiple Indian languages.

37. (B) ABHA Number
Under the Ayushman Bharat Digital Mission, citizens can generate an Ayushman Bharat Health Account number. This 14-digit digital identifier uniquely identifies individuals across health ecosystems. It links personal health records, diagnostic reports, and prescription histories digitally with explicit consent, facilitating seamless, paperless interaction with medical practitioners and healthcare institutions nationwide.

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19. (A) Deep-sea mining
NITI Aayog's national AI strategy identifies five core sectors for artificial intelligence application: healthcare, agriculture, education, smart cities, and smart mobility. These focus areas aim to maximize social impact and inclusive economic growth. Deep-sea mining is not categorized as a primary focus sector within this national social development strategy framework for artificial intelligence.

20. (D) BHIM
Bharat Interface for Money is a mobile payment application developed by the National Payments Corporation of India, launched in December 2016. Based on the Unified Payments Interface, it enables simple, direct bank-to-bank electronic fund transfers using virtual payment addresses or scanned QR codes without sharing bank details during transactions.

21. (B) UPI
Unified Payments Interface allows real-time fund transfers between bank accounts without requiring account numbers or IFSC codes. Users complete transactions using a Virtual Payment Address, which links directly to their bank details. This system protects financial privacy while providing round-the-clock, instant digital settlement for peer-to-peer and merchant transactions nationwide.

22. (C) Mangalyaan (Mars Orbiter Mission)
The Mars Orbiter Mission, informally called Mangalyaan, was launched by the Indian Space Research Organisation in November 2013. It successfully entered Martian orbit in September 2014, making India the first nation to reach Mars orbit on its maiden attempt. The mission studied Martian surface features, morphology, mineralogy, and atmospheric composition.

23. (D) Chandrayaan-3
Chandrayaan-3 achieved a historic spaceflight milestone on August 23, 2023, by executing a successful soft landing near the lunar south pole. Executed by the Indian Space Research Organisation, this mission made India the fourth nation to land on the Moon and the first to reach the unexplored lunar south polar region.

24. (A) Digital India → Startup India → 5G Launch in India
The Digital India programme was launched first in July 2015 to transform the nation's digital landscape. The Startup India initiative followed in January 2016 to encourage local innovation and business ventures. Subsequently, official commercial 5G telecom services were formally launched in October 2022, placing these national initiatives in exact historical order.

25. (C) October 2022
Commercial 5G telecommunication services were officially inaugurated in India in October 2022 during the India Mobile Congress event. The rollout introduced fifth-generation mobile network technology across selected major cities, offering ultra-high data download speeds, significantly reduced latency, and enhanced capacity for digital public utilities and connected industrial applications.

26. (B) Millimetre wave frequencies
Fifth-generation mobile networks achieve high data speeds and low operational latency by utilizing millimetre wave frequencies alongside advanced antenna technologies like Massive MIMO. Operating at higher radio spectrum ranges enables transmission of larger volumes of data over short distances, delivering vastly superior wireless performance compared to previous cellular technology standards.

27. (A) Study Webs of Active-Learning for Young Aspiring Minds
SWAYAM stands for Study Webs of Active-Learning for Young Aspiring Minds. Launched by the Ministry of Education, it is an indigenous Massive Open Online Course platform designed to offer high-quality educational courses online. It provides equitable access to learning resources for students from school level to post-graduation, promoting nationwide digital educational inclusion.

28. (C) Ministry of Electronics and Information Technology
The India Semiconductor Mission functions under the administrative oversight of the Ministry of Electronics and Information Technology. Launched as a specialized business division within Digital India Corporation, ISM is tasked with building a vibrant, resilient semiconductor and display design, manufacturing, and innovation

(C) Interconnecting physical desktop computers using high-speed optical fibre cables across cities
(D) Designing and developing interactive mobile software applications specifically for local farmers

137. Match List I with List II and select the correct answer using the codes given below:
List I: (Emerging Technology Abbreviation)
P. IoT
Q. AI
R. ML
S. VR
List II: (Full Form)
1. Virtual Reality
2. Machine Learning
3. Internet of Things
4. Artificial Intelligence
(A) P-3, Q-4, R-2, S-1
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-2, R-4, S-1
(D) P-1, Q-4, R-2, S-3

138. Consider the following statements regarding the 'Startup India' scheme:
I. It is an initiative of the Department for Promotion of Industry and Internal Trade (DPIIT).
II. It offers tax exemptions to recognized eligible startups.
III. It is strictly limited to IT and software startups only.
Which of the above statement(s) is/are correct?
(A) I only
(B) I and II only
(C) II and III only
(D) I, II, and III

139. Consider the following statements regarding the India Semiconductor Mission (ISM):
I. It is driven by the Ministry of Electronics and Information Technology (MeitY).
II. It provides financial incentives for setting up semiconductor fabrication plants in India.
III. It aims to reduce India's reliance on imported microchips.
IV. It only supports government-owned PSUs and excludes private companies.
Which of the above statement(s) is/are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and IV only
(D) I, II, III, and IV

140. Which national award in India recognizes excellence in the implementation of e-Governance initiatives by government departments and districts?
(A) Digital India Awards
(B) Bharat Ratna for Technology
(C) National e-Governance Awards
(D) Skoch Smart Governance Award

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38. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
India holds a globally dominant position in processing high volumes of real-time digital payment transactions annually. This status is directly driven by the widespread public adoption of the Unified Payments Interface platform, which enables instant, mobile-first financial operations. Consequently, UPI's interoperability and user accessibility serve as the exact functional driver for this transaction dominance.

39. (C) 14
An Ayushman Bharat Health Account number consists of a unique 14-digit digital sequence generated for citizens under the Ayushman Bharat Digital Mission. This randomized number establishes a verified digital identity, enabling individuals to store, manage, and share personal health records electronically with licensed healthcare providers across participating hospitals and diagnostic laboratories.

40. (A) Software Technology Parks of India
STPI stands for Software Technology Parks of India. It is an autonomous organizational body under the Ministry of Electronics and Information Technology. Established in 1991, STPI focuses on promoting software export capabilities, managing tech incubation centers, and driving regional growth in software engineering and technology services across diverse geographical locations.

41. (B) Defence and aerospace
The Defence Research and Development Organisation is India's premier agency responsible for military research, design, and hardware development. Functioning under the Ministry of Defence, DRDO develops tactical systems, strategic radar units, advanced missiles, unmanned vehicles, naval equipment, and aerospace technology to enhance indigenous self-reliance in national security and defence operations.

42. (C) 2023
The Union Cabinet approved the National Quantum Mission in April 2023 to advance scientific and industrial research and development in quantum technologies. The mission aims to foster quantum computing capabilities, secure quantum communications, advanced sensors, and quantum materials development, establishing the country as a leader in emerging quantum tech domains.

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43. (A) Computing using qubits and quantum principles
Quantum computing is an advanced computational paradigm that utilizes principles of quantum mechanics, including superposition, entanglement, and interference. Unlike classical computing systems that rely on binary bits representing zeroes or ones, quantum computers process data using quantum bits, enabling complex scientific simulations and problem-solving operations exponentially faster than traditional devices.

44. (C) To securely store and verify digital documents
DigiLocker is a flagship cloud platform under the Digital India initiative that provides citizens with a secure personal document storage space. It enables users to store, access, and share digital versions of official documents—such as academic mark sheets, driving licenses, and vehicle registrations—directly issued by verified government agencies electronically.

45. (A) P-3, Q-4, R-2, S-1
Key technological initiatives serve distinct functional roles in digital infrastructure. Aadhaar provides verified biometric identity authentication for residents. BHIM enables real-time peer-to-peer financial transactions through UPI. SWAYAM delivers accessible online educational courses via Massive Open Online Courses. PARAM represents the high-performance indigenous supercomputer series developed for advanced scientific computing tasks.

46. (C) India Stack
India Stack refers to the integrated set of open Application Programming Interfaces and digital public infrastructure components created to deliver presence-less, paperless, and cashless service delivery. Combining foundational digital building blocks like Aadhaar, UPI, DigiLocker, and eSign, it allows software developers to construct interoperable digital services across economic sectors.

47. (B) Bhashini
Digital India Bhashini is an artificial intelligence-driven language translation initiative launched by the Ministry of Electronics and Information

software output, and leverages round-the-clock working hours across distinct time zones.

10. (B) UMANG
Unified Mobile Application for New-age Governance serves as a single mobile platform giving citizens access to central, state, and local government services. Developed by the Ministry of Electronics and Information Technology alongside the National e-Governance Division, it integrates major public services like healthcare, utility payments, education, and social security applications within one user interface.

11. (A) Fingerprints and iris scans
Generating an Aadhaar card requires collecting specific biometric traits alongside demographic details. The biometric attributes collected include scans of all ten fingerprints, two iris scans, and a facial photograph. These unique anatomical markers are processed through biometric matching algorithms to establish individual uniqueness and prevent duplicate identity creation in the central database.

12. (A) P-3, Q-1, R-2, S-4
Digital initiatives in India target distinct operational sectors to streamline public service delivery. DIKSHA provides online resources for school education. The e-NAM portal creates a unified trading network for agricultural produce. BHIM facilitates digital financial payments via mobile devices. Ayushman Bharat Digital Mission establishes an integrated digital framework for healthcare delivery and electronic medical records.

13. (D) Centre for Development of Advanced Computing
The PARAM series of high-performance supercomputers is developed indigenously by the Centre for Development of Advanced Computing. Established in 1988 to build native computing technologies, C-DAC designed successive generations of supercomputers within the PARAM series, deployed extensively for scientific research, numerical weather prediction, bioinformatics, and computational fluid dynamics applications across national institutions.

14. (C) AI for All
NITI Aayog published the national strategy document titled National Strategy for Artificial Intelligence, guided by the overarching motto of AI for All. The strategy emphasizes leveraging artificial intelligence for social inclusion, economic growth, and solving complex societal challenges across core sectors like agriculture, healthcare, education, smart cities, and sustainable mobility solutions.

15. (B) Centre for Development of Advanced Computing
C-DAC stands for Centre for Development of Advanced Computing. It functions as the premier research and development organization under the Ministry of Electronics and Information Technology. Established to carry out advanced R&D in electronic technologies, high-performance computing, software development, and digital communications, it plays an essential role in strengthening technological self-reliance.

16. (D) Pune
The headquarters of the Centre for Development of Advanced Computing is located in Pune, Maharashtra. Established in 1988, this primary institution manages multi-disciplinary scientific R&D initiatives across various regional centers. The Pune center played a central role in designing India's early indigenous supercomputers, establishing high-performance computing standards for national scientific advancement.

17. (A) Foster entrepreneurship and innovation
The Startup India initiative was launched to build a strong ecosystem for nurturing innovation and supporting emerging entrepreneurial ventures. Managed by the Department for Promotion of Industry and Internal Trade, the programme provides simplified regulatory compliance, tax exemptions, funding assistance, and mentorship frameworks to convert innovative concepts into sustainable business enterprises.

18. (A) I and II only
PARAM 8000 was successfully developed in 1991 as an indigenous supercomputing effort led by the Centre for Development of Advanced Computing. These systems were built for high-level scientific calculations, weather modeling, and engineering simulations rather than digital gaming. Consequently, statements verifying its development date and native origin are accurate while usage restrictions are false.

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solid-state drives or hard disks allows users to save and preserve information even after turning off power.

58. (A) III → II → IV → I
Making a standard UPI payment involves a logical step-by-step sequence. First, the user opens the UPI application on a mobile device. Next, the merchant's QR code is scanned to extract payment details. Then, the transfer amount is specified. Finally, the user enters the secret UPI PIN to authorize the transaction.

59. (A) Random Access Memory
RAM stands for Random Access Memory. It functions as the primary volatile memory within a computer system, enabling the central processing unit to read and write operational data rapidly. RAM temporarily holds active operating system files and running program data to allow immediate execution, but clears all contents when powered off.

60. (B) 1024 MB
In binary computing measurement systems, storage capacities increase exponentially using powers of two. Specifically, 1 Gigabyte equals exactly 1024 Megabytes because binary memory architecture defines a kilobyte unit multiplier as two raised to the tenth power, resulting in 1024 bytes per kilobyte and 1024 megabytes per gigabyte.

61. (D) Linux
Linux is a widely recognized open-source operating system kernel whose source code is freely available to developers for modification, redistribution, and customization. Unlike proprietary operating systems such as Microsoft Windows or macOS, Linux benefits from continuous global community collaboration, driving robust security, server stability, and versatile software distribution builds worldwide.

62. (C) Online delivery of district citizen services
The e-District project in Uttar Pradesh focuses on expanding web-enabled citizen services at the district and sub-divisional levels. By digitizing administrative processes, it enables online application and issuance of income, caste, domicile certificates, and revenue licenses through common service centers, thereby eliminating administrative delays and ensuring transparent service delivery.

63. (B) Tricking users into sharing sensitive personal data
Phishing is a fraudulent cybercrime technique where attackers deceive individuals into revealing sensitive data, such as login credentials, bank details, or credit card numbers. Commonly conducted through fraudulent emails, fake websites, or deceptive messaging platforms, phishing relies on social engineering tactics to manipulate victims into exposing private confidential information.

64. (D) Switch
A network switch is an essential hardware device used to interconnect multiple computers and peripheral devices within a Local Area Network. Operating at the data link layer, a switch processes and forwards packet data specifically to the destination device using physical MAC addresses, optimizing internal network traffic and bandwidth distribution.

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65. (A) I, II, and IV only
BharatNet is financed by the Universal Service Obligation Fund and implemented by Bharat Broadband Network Limited to connect all Gram Panchayats with high-speed broadband. It primarily utilizes physical optical fibre network infrastructure rather than exclusive satellite channels. Consequently, statements highlighting its funding source, target connectivity, and managing corporation are correct.

66. (C) Ctrl + V
In Microsoft Word and most computer software interfaces, pressing the key combination Ctrl + V pastes previously copied or cut text, images, or elements into the active document cursor position. This standard keyboard shortcut streamlines text editing by retrieving stored clip data instantly without navigating system context menus.

67. (A) .xlsx
The file extension .xlsx is the default file format associated with modern Microsoft Excel spreadsheets. Introduced with Office 2007, this XML-based format organizes workbook data, financial tables, calculations, charts, and macros into compressed data structures, replacing the legacy binary file extension format known historically as .xls in older versions.

68. (D) Digital Infrastructure for Knowledge Sharing
DIKSHA stands for Digital Infrastructure for Knowledge Sharing. Launched under the Ministry of Education, this national digital infrastructure empowers teachers, students, and institutions across India by providing interactive educational resources, QR-coded energized textbooks, professional training modules, and structured open learning contents tailored to distinct state educational boards.

69. (B) Ransomware
Ransomware is a malicious software strain that encrypts a victim's files, storage drives, or entire system access, rendering files completely unusable. The cyber attackers then demand digital monetary payment, usually in cryptocurrency, in exchange for providing decryption keys to restore system access and recover locked data files.

70. (C) A system monitoring network traffic
A network firewall is a specialized security mechanism, implemented as software, hardware, or a combination, that continuously monitors incoming and outgoing network traffic. It evaluates data packets against defined security rules to block unauthorized connections and malicious intrusions while allowing legitimate network communications to pass safely through system boundaries.

71. (D) Store authentic digital documents
DigiLocker provides secure cloud-based digital storage tied directly to an individual's Aadhaar identifier. It allows users to store, access, and share authentic digital documents—such as educational certificates, driving licenses, and insurance policies—issued directly by registered authorities, effectively eliminating the requirement for carrying physical paper documents.

72. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
India achieved a massive increase in domestic mobile phone production following the launch of Make in India. This manufacturing expansion was directly accelerated by introducing the Production Linked Incentive scheme, which granted clear financial benefits based on local production output. Thus, targeted financial incentives successfully stimulated local manufacturing growth.

73. (B) Bus Topology
Bus topology is a network architecture where all devices and network nodes connect directly to a single shared central cable known as the backbone or bus. Data transmissions travel along this common medium in both directions, making installation simple and cost-effective for smaller networks, though single cable breaks halt all activity.

74. (B) Identifying a device on a network
An IP address, or Internet Protocol address, serves as a unique numerical identifier assigned to every device connected to a computer network. It enables devices to locate, communicate, and route data packets to one another across local networks or over the global internet using standardized network communication protocols.

75. (A) HTTP
Hypertext Transfer Protocol is the foundational application-layer protocol used for transferring hypermedia documents, such as web pages, across the World Wide Web. It governs client-server communication by defining standard commands for requesting, fetching, and rendering web page content from remote servers to user web browser applications directly.

76. (C) To hide recipient addresses from others
The Blind Carbon Copy field in email messaging allows senders to distribute messages to multiple individuals without revealing recipient email addresses to each other. Address entries listed within the BCC line remain completely hidden from all other recipients, preserving contact privacy and avoiding mass distribution of visible email lists.

77. (D) Read-Only Memory (ROM)
Read-Only Memory is categorized as primary computer memory because it is directly accessible by the Central Processing Unit. ROM contains essential non-volatile system startup instructions, such as the BIOS firmware, required during system boot sequences. In contrast, secondary storage devices like hard drives, SSDs, and pen drives are auxiliary.

78. (C) Touchscreen Display
A touchscreen display functions simultaneously as an input and an output hardware device. It serves as an input medium by detecting physical finger touches or stylus gestures on its surface,

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while concurrently acting as an output interface by rendering visual graphics, video frames, and interactive software display elements.

79. (A) P-3, Q-1, R-2, S-4
Digital infrastructures enable specific administrative and commercial capabilities across India. eSign provides legally valid electronic signature functionality. ONDC establishes an open network for democratizing digital commerce. NKN functions as a high-speed broadband network connecting research and higher educational institutions. UPI operates as an instant real-time payments settlement framework.

80. (D) Bing
Google Chrome, Mozilla Firefox, and Microsoft Edge are web browser software applications used to navigate and view websites on the internet. In contrast, Bing is a web search engine operated by Microsoft that indexes web pages to retrieve search query results, making it conceptually distinct from web browsing software.

81. (B) 0 and 1
The binary number system uses a base-two numerical architecture consisting strictly of two discrete symbolic digits: zero and one. Modern computer systems operate fundamentally on binary logic, using electronic circuits that interpret these binary states as off and on signals to process, represent, and store data internally.

82. (C) Bharat Interface for Money
BHIM stands for Bharat Interface for Money. Named after Dr. Bhimrao Ambedkar, it is a mobile payment application developed by the National Payments Corporation of India. Built upon the Unified Payments Interface, it allows simple direct bank transfers and instant peer-to-peer financial transactions using mobile phone numbers or virtual addresses.

83. (A) Vacuum Tubes
First-generation computing machines, developed during the late 1940s and 1950s, relied primarily on vacuum tubes as their core electronic switching circuitry and memory elements. These glass vacuum tubes generated substantial heat, consumed massive electrical power, and possessed limited lifespan, leading to frequent system hardware failures in early computers.

84. (D) Arithmetic Logic Unit
The Arithmetic Logic Unit is a fundamental digital circuit integrated within the Central Processing Unit. It performs all fundamental arithmetic calculations, including addition and subtraction, alongside logical operations like conditional comparisons and evaluations. The ALU executes these binary operations continuously based on operational instructions directed by the control unit.

85. (B) Semiconductor and electronics production
The India Semiconductor Mission aims to transform India into a global hub for semiconductor design and electronics manufacturing. By providing structured financial subsidies and infrastructure support, the initiative attracts global technology investments to establish local fabrication foundries, packaging facilities, and microchip assembly plants across the national technological sector.

86. (D) I, II, and III
CERT-In stands for Indian Computer Emergency Response Team and functions as the national nodal agency for managing computer security incidents. Established under provisions of the Information Technology Act, 2000, it monitors national cyber threat trends, handles emergency security breaches, and distributes vulnerability advisories across critical public information systems.

87. (D) Record
In relational database systems, data is organized into structured tables composed of horizontal rows and vertical columns. A single horizontal row containing a collection of related data attributes for a distinct item or entity is called a record or tuple, representing individual data entries inside database tables.

88. (A) It can contain NULL values.
A primary key in relational database design must uniquely identify every row within a table and cannot contain NULL values under entity integrity constraints. Allowing NULL values would break uniqueness enforcement, making it impossible to index or reference individual record entries uniquely across database tables and relational keys.

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academic and scientific development nationwide through digital connectivity.

110. (C) Blockchain
Blockchain technology is a decentralized, distributed ledger system that records transactions across network nodes securely. Because recorded data blocks are cryptographically linked and immutable, blockchain ensures transparent, tamper-proof recordkeeping. While foundational to cryptocurrencies, it is increasingly adopted in e-governance for land registry tracking, supply chain validation, and digital identity management.

111. (B) National Payments Corporation of India
The RuPay card payment network was conceived and launched by the National Payments Corporation of India in 2012. Designed as an indigenous domestic card payment system, RuPay reduces transaction processing costs for domestic banks, expands card issuance for financial inclusion initiatives, and provides a national alternative to international card networks.

112. (D) Supercomputers
PARAM 8000, PARAM Padma, and PARAM Shivay belong to the landmark PARAM series of indigenous supercomputers designed and manufactured in India by C-DAC. Deployed across research institutes, universities, and national weather monitoring centers, these high-performance supercomputing systems execute complex scientific calculations, climate predictions, materials modeling, and computational fluid dynamics.

113. (A) Democratizing e-commerce through an open network model
The Open Network for Digital Commerce is an initiative by the Government of India designed to democratize e-commerce. By transitioning online retail from centralized platform models to an open network protocol, ONDC enables small merchants, local retailers, and logistics providers to participate seamlessly in digital commerce without platform lock-in constraints.

114. (A) P-3, Q-4, R-1, S-2
ISRO space missions focus on distinct astronomical objectives. Chandrayaan-3 achieved lunar surface exploration and soft landing. Mangalyaan operated in Martian orbit to study planet atmospheric features. Gaganyaan is engineered for human spaceflight capabilities in Low Earth Orbit. Aditya-L1 serves as a space-based observatory dedicated to continuous solar observation and dynamics.

115. (A) Malware disguised as a legitimate program
A Trojan Horse is a type of malicious software that disguises itself as legitimate or harmless software to trick users into installing it. Once executed, a Trojan can open secret backdoors, steal sensitive personal data, corrupt local system files, or grant unauthorized remote access to malicious external cyber operators.

116. (D) SPECS scheme for electronic components manufacturing
The Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors, known as SPECS, was launched to strengthen the domestic electronics manufacturing ecosystem. It offers capital expenditure subsidies for establishing manufacturing facilities for raw electronic components, semiconductors, printed circuit boards, and specialized hardware sub-assemblies across the country.

117. (B) Undo the last action
The keyboard shortcut Ctrl + Z is universally used across Windows operating systems and software applications to undo the most recent user action. Pressing these keys reverses recent text edits, formatting changes, or file modifications, allowing users to restore previous document states quickly during active editing tasks.

118. (C) CD-ROM
A CD-ROM is an optical storage device that uses laser beam light technology to read digitally encoded data stored on optical discs. Unlike magnetic storage media such as magnetic tape or floppy disks, optical drives interpret reflective pits and lands carved into disc surfaces to retrieve data files securely.

119. (D) WAN
A Wide Area Network spans vast geographical distances, connecting local networks across cities, regions, countries, or globally. WAN infrastructure relies on leased telecommunication lines, fiber-optic backbones, and satellite channels to transmit data. The global internet represents the largest and most prominent example of a Wide Area Network architecture.

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tools across diverse Indian languages. Its primary goal is to break linguistic barriers, enabling equitable digital access to online services, educational content, and administrative tools for citizens in their native vernacular languages.

100. (D) I, II, III, and IV
The Digital India initiative is constructed upon nine strategic growth pillars designed to achieve comprehensive digital transformation nationwide. These core operational pillars include Broadband Highways, Universal Access to Mobile Connectivity, e-Kranti for electronic delivery of public services, and Early Harvest Programmes for rapid execution of digital infrastructure targets across institutions.

101. (B) F5
In Microsoft PowerPoint, pressing the F5 function key immediately launches the slide show presentation in full-screen mode starting from the very first slide. Alternatively, pressing Shift + F5 initiates the presentation view directly from the currently active slide, making F5 the default key for starting complete slideshows.

102. (C) =
In Microsoft Excel, every custom formula or built-in function statement must strictly begin with an equal sign (=). The equal sign signals to the spreadsheet engine that the subsequent cell text represents a mathematical formula or function to evaluate, rather than plain static text strings or numerical values.

103. (D) Nibble
Among data storage units, a nibble represents a four-bit aggregation of binary data, making it smaller than a byte, which consists of eight bits. Kilobytes and megabytes represent significantly larger storage capacities. Consequently, the nibble is the smallest memory unit listed compared to bytes, kilobytes, and megabytes.

104. (A) Windows
Microsoft Windows is a proprietary operating system developed, owned, and commercially licensed by Microsoft Corporation. Unlike open-source operating systems like Linux or Ubuntu, the underlying source code of Windows is kept confidential, and users must abide by commercial licensing terms without freedom to modify or redistribute its underlying codebase.

105. (B) A cryptographic method validating document authenticity
A digital signature is a mathematical and cryptographic mechanism used to authenticate the identity of a sender and verify the integrity of electronic documents. By applying public key infrastructure algorithms, it ensures that electronic messages or digital files have not been altered or tampered with following signing, providing non-repudiation legally.

106. (B) An internal channel transferring data between components
In computer system architecture, a bus is an internal communication pathway or channel consisting of physical wires or optical connections. It transfers data signals, memory addresses, and system control commands between major internal hardware components, including the central processor, system memory registers, graphics controllers, and auxiliary peripheral expansion slots.

107. (A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.
Software Technology Parks of India played a pivotal role in expanding India's software export sector. This impact resulted directly from STPI offering critical operational incentives, including single-window statutory clearances, high-speed international data communication channels, and tax relief for software exporters, making the reason the correct explanation for IT industry growth.

108. (C) Translating domain names into IP addresses
The primary function of a Domain Name System server is to translate human-readable domain names, such as website addresses, into machine-readable numerical IP addresses. This translation allows web browsers to connect to the correct web hosting servers across the internet without requiring users to memorize complex numerical server IP coordinates.

109. (D) National Knowledge Network
NKN stands for National Knowledge Network. Established as a high-speed grid network infrastructure in India, it connects educational, scientific, and research institutions across the nation. NKN facilitates collaborative research, virtual classrooms, data sharing, and access to specialized computing facilities, advancing

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120. (A) Format Painter
Format Painter is an MS Word tool that allows users to copy all formatting attributes—such as font type, size, text color, and paragraph spacing—from selected text and apply them directly to another section. It streamlines document editing by maintaining consistent visual formatting across different paragraphs without manually reconfiguring settings.

121. (A) I and II only
SWAYAM provides online certification courses to students across India, offering free access to video lectures, reading materials, and self-assessment quizzes. It spans diverse academic disciplines, including engineering, humanities, science, and management, rather than focusing exclusively on medical science. Thus, statements regarding general course availability and free content access are accurate.

122. (B) USB Port
Universal Serial Bus ports are standard hardware interfaces used to connect external peripheral devices—such as mice, keyboards, flash drives, and printers—to modern personal computers. USB interfaces support hot-swapping and plug-and-play functionality, providing reliable power delivery and fast data transfer speeds for peripheral hardware devices.

123. (A) AgriStack
AgriStack is the open digital infrastructure created under the Digital Agriculture Mission to build a comprehensive farmer-centric database. It assigns unique digital IDs to farmers and integrates land ownership details with crop registries, enabling targeted delivery of agricultural advisory services, government subsidies, crop insurance, and credit access across the farming sector.

124. (C) Uttar Pradesh
Uttar Pradesh was among the pioneer states to implement the e-District project extensively across all its districts to digitize citizen services. By linking sub-divisional administrative offices and local common service centers, the project enabled web-based issuance of essential certificates, land records, and welfare services directly to citizens across rural areas.

125. (D) Ayushman Bharat Digital Mission
ABDM stands for Ayushman Bharat Digital Mission. Launched by the Government of India, it aims to establish a seamless national digital health ecosystem. ABDM creates unique health IDs for citizens, digitizes medical records, and links healthcare providers across an integrated digital platform to promote paperless, efficient healthcare delivery nationwide.

126. (C) Utility Software
Antivirus software is categorized as utility software because it performs routine maintenance and protective analysis to support smooth computer operations. It safeguards operating systems by detecting, isolating, and removing malicious software threats, ensuring continuous computer security, system integrity, and protection against unauthorized external network intrusions and internal malware infections.

127. (B) Internet Service Provider
ISP stands for Internet Service Provider. An ISP is a commercial company or organization that provides individuals, businesses, and government entities with access to the global internet. ISPs establish telecommunication connections, offer broadband internet infrastructure, assign IP addresses, and maintain routing pathways required for digital network communication worldwide.

128. (A) I, II, and III only
India's IT and ITES sector is a major private sector employer, contributes significantly to service exports, and relies heavily on the Global Delivery Model. However, the United States remains its largest export market, ahead of the European Union. Consequently, statements highlighting domestic employment, export earnings, and operational models are correct.

129. (A) Extremely large or complex datasets
Big Data refers to massive, complex, or rapidly growing datasets that exceed the storage, processing, and management capabilities of traditional relational databases. Characterized by high volume, velocity, and variety, Big Data requires specialized computational frameworks, distributed algorithms, and advanced analytical tools to extract meaningful insights and actionable business intelligence.

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89. (B) Booting
Booting is the initial process executed by a computer system when powered on, involving system self-tests and loading the operating system kernel from secondary storage into RAM. Controlled by firmware like BIOS or UEFI, booting initializes hardware components, prepares memory configurations, and provides user interface controls for software usage.

90. (B) ROM
Read-Only Memory is categorized as non-volatile memory because it permanently retains stored data and instruction codes even when computer power is switched off. Unlike volatile memory such as RAM or cache memory, which loses data immediately upon power disconnection, ROM safeguards persistent boot instructions essential for hardware initialization.

91. (A) Uniform Resource Locator
URL stands for Uniform Resource Locator. It serves as the standardized global address format used to identify and locate specific digital resources, such as web pages, document files, or media files, across the internet. A URL specifies the network protocol, domain hostname, and file path parameters necessary for access.

92. (C) UP Jansunwai (IGRS)
Jansunwai, integrated within the Integrated Grievance Redressal System in Uttar Pradesh, is a dedicated digital platform enabling citizens to submit and track administrative grievances online. It connects various state departments, ensuring accountable, time-bound investigation and public resolution of citizen complaints while providing digital status updates transparently.

93. (B) 2G → 3G → 4G → 5G
Mobile telecommunication standards evolved chronologically from second-generation digital voice networks (2G) to third-generation mobile broadband data networks (3G). Subsequent advances introduced high-speed fourth-generation Long-Term Evolution systems (4G), leading finally to modern ultra-fast fifth-generation wireless infrastructure (5G) with minimal operational latency and enhanced network capacities.

94. (C) Secure
In the context of network protocols, HTTPS stands for Hypertext Transfer Protocol Secure. The added "S" denotes that data transferred between the user web browser and the web server is encrypted using Transport Layer Security or Secure Sockets Layer protocols, safeguarding confidential user transactions and data transmissions against eavesdropping.

95. (B) National Payments Corporation of India
NPCI stands for National Payments Corporation of India. It functions as an umbrella organization for operating retail payment and settlement systems across India. Created under the guidance of the Reserve Bank of India and Indian Banks' Association, NPCI manages critical digital financial infrastructure, including UPI, RuPay, IMPS, and AePS.

96. (D) Tata Consultancy Services
Tata Consultancy Services achieved a significant corporate milestone in April 2018 by becoming the first Indian Information Technology service company to surpass a market capitalization of $100 billion. As a global software services exporter, TCS established leadership across IT consulting, custom software development, and digital enterprise solutions globally.

97. (A) Physical objects connected via sensors exchanging data
The Internet of Things refers to a global network of physical devices, appliances, and industrial machinery equipped with embedded sensors, software, and connectivity components. These connected objects collect and exchange operational data over the internet automatically, enabling real-time remote monitoring, smart automation, data analytics, and improved operational efficiency across sectors.

98. (C) Machine simulation of human intelligence
Artificial Intelligence refers to the simulation of human intelligence processes by computer systems and specialized machine software. It encompasses cognitive functions such as machine learning, problem-solving, pattern recognition, spatial perception, and language interpretation, enabling automated systems to execute complex analytical tasks traditionally requiring direct human intelligence and reasoning capabilities.

99. (A) AI-based translation across Indian languages
Digital India Bhashini is a public digital platform that utilizes artificial intelligence and natural language processing to build machine translation

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140. (C) National e-Governance Awards
The National e-Governance Awards are presented annually by the Department of Administrative Reforms and Public Grievances to recognize excellence in implementing e-governance initiatives. These awards celebrate innovative digital governance solutions, successful process re-engineering, and exemplary public service delivery projects implemented by government departments, public sector undertakings, and district authorities.

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130. (C) Worm
A computer worm is a standalone malware program that replicates itself continuously and spreads across computer networks without attaching to an existing host file or requiring human intervention. Utilizing network vulnerabilities, worms consume substantial bandwidth, degrade server performance, and drop secondary malicious software payloads onto infected host systems automatically.

131. (A) AutoSum
AutoSum is a built-in feature in Microsoft Excel that automatically inserts a formula to calculate the total sum of a selected range of adjacent cells. Activated by clicking the AutoSum button or using keyboard shortcuts, it identifies numerical sequences above or beside the cell, speeding up calculation workflows.

132. (D) Bit
A bit, short for binary digit, is the smallest basic unit of data in computing. Represented as either a 0 or a 1, a bit corresponds to a physical electrical state in hardware circuits. Higher data storage structures, such as four-bit nibbles and eight-bit bytes, are constructed from combinations of bits.

133. (B) To encode data against unauthorized access
Encryption is a fundamental security process that transforms readable plain text data into unreadable ciphertext using cryptographic algorithms and key pairs. Its primary purpose is to safeguard sensitive data during storage or transmission, ensuring that only authorized parties possessing the corresponding decryption key can decode and view the information.

134. (C) PARAM Himalaya
PARAM Himalaya is a high-performance supercomputing facility established at IIT Mandi under the National Supercomputing Mission. Recognized globally among top computing installations, it provides high-throughput computational infrastructure for advanced scientific research, multi-scale simulations, climate science, molecular modeling, and artificial intelligence applications, boosting national technological capabilities in academic research institutions.

135. (C) Assertion (A) is true but Reason (R) is false.
The National Quantum Mission was approved to establish national leadership in advanced quantum technology development. However, quantum computing does not rely on classical binary bits; instead, it processes data using quantum bits, or qubits, capable of superposition and entanglement. Thus, the assertion regarding national mission goals is true while the reason is false.

136. (A) Delivering computing services over the internet
Cloud computing refers to the on-demand delivery of computing services—including servers, storage, databases, networking, and software applications—over the internet. Rather than maintaining local physical hardware, users and enterprises access flexible computing resources remotely, lowering operational costs, facilitating rapid scalability, and enabling secure centralized data access from any location.

NODIA

137. (A) P-3, Q-4, R-2, S-1
Modern technology abbreviations represent key computing domains. IoT stands for Internet of Things, connecting physical objects to networks. AI denotes Artificial Intelligence, simulating human cognitive tasks in software. ML refers to Machine Learning, enabling systems to learn automatically from data patterns. VR represents Virtual Reality, creating immersive digital user environments.

138. (B) I and II only
The Startup India initiative is driven by the Department for Promotion of Industry and Internal Trade to foster innovation across all commercial industries. It grants eligible startups tax exemptions, simplified compliance, and funding support, without restricting benefits exclusively to IT companies. Therefore, statements acknowledging DPIIT leadership and tax benefits are accurate.

139. (A) I, II, and III only
The India Semiconductor Mission is managed by the Ministry of Electronics and Information Technology to offer financial incentives for establishing domestic semiconductor fabrication facilities and reducing chip import dependencies. It supports private enterprises alongside public entities to foster a competitive ecosystem, rendering the statement limiting support exclusively to PSUs incorrect.